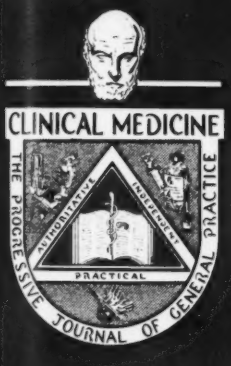
Medical Library

MAR 16 1942

CLINICAL MEDICINE



MARCH 1942

LEADING ARTICLES

Page

Subcutaneous Implantation of Testosterone in Male Eunuchoidism - - - - - - - 66

The Management of Urinary Stones by the General Practitioner - - - - - - - 69

The Anemias - - - - - - - - - - - 73

Differential Diagnosis in Diseases of the Liver 76

COMPLETE TABLE OF CONTENTS ON ADVERTISING PAGE SIX

Copyright 1942 by The American Journal of Clinical Medicine, Inc.

VOLUME 49 NUMBER 3

Eighty acres of good land

. . . and STARVATION

Contrary to popular belief, even people living on American farms may suffer from inadequate diets.* The physician in rural areas, like his colleague in the cities, is decidedly *not safe* in assuming that his patients are receiving sufficient amounts of all the necessary vitamins. In a majority of cases, of course, in town or country there are no clear-cut clinical symptoms. Studies show, however, that although the *classical* vitamin deficiency diseases are seldom encountered, *partial* vitamin deficiencies are by no means rare. In such cases, along with correction of the diet, the administration of a vitamin supplement—a *dependable* vitamin supplement—is a rational and timely measure. More and more often, *Abbott* is the brand preferred. Physicians everywhere know that specifying Abbott on their prescriptions is a simple, certain means of insuring that patients receive all of the vitamin units claimed on the label. Abbott Laboratories, North Chicago, Ill.

*"25% of nonrelief farm families have poor diets." Bureau of Home Economics, U. S. Department of Agriculture, No. 430, 1941.

BRIG. GEN. SHELLEY U. MARIETTA, D.D.S., M.D., F.A.C.P.

Volume 49 ★ Number 3
MARCH, 1942

Clinical Medicine

GEORGE B. LAKE, M.D., Editor

Editorial Staff

Frank Thomas Woodbury, B.A., M.D.
Lee Douglas van Antwerp, A.B., M.D., F.A.C.P.
W. A. N. Dorland, A.M., M.D., F.A.C.S.
Harold Swanberg, B.Sc. M.D., F.A.C.P.
Gentz Perry, M.S., M.D., F.A.C.R.
Ralph L. Gorrell, B.S.M., M.D., D.N.B.
H. J. Achard, M.D.

★ Editorial ★

Shelley U. Marietta

Commanding General, Army Medical Center

AT ALL times, but especially in time of war, the care of sick and wounded soldiers and the instruction of medical officers (for even the best of civilian physicians need special instruction to make them efficient members of the Army Medical Corps), nurses, and enlisted men are the most important functions of the Medical Department of the Army, and the man who has direct charge of such activities plays a vital part in the success of our military efforts.

The Army Medical Center, which includes the Army Medical, Dental, Veterinary, Nursing, and Enlisted Technicians' Schools, and Walter Reed General Hospital, with all the extensive laboratories, quarters, and other adjuncts pertaining to them, is located eight miles west of the Capitol, in Washington, D. C., and occupies 97 acres of ground (see CLIN. MED. & SURG., Dec., 1930, page 883 to 887 for a full description), and the man now commanding this vast and complex institution is Brig. Gen. Shelley U. Marietta, Assistant to the Surgeon General, whose portrait (taken several years ago) appears as our frontispiece.

Dr. Marietta was born in Iowa, in 1881, and grew up in Des Moines, where he attended the public and high schools and was graduated from the Dental Department of Drake University in 1902. He practiced dentistry there, and served as a member of the dental faculty of the University for several years, but not being satisfied with his attainments, he entered the Medical Department of the University of Illinois, from which he received his Doctorate in Medicine in 1909, after which he returned to his home town to practice his new profession, and teach it in his *Alma Mater*, for a year, until in March, 1910, he was commissioned a first lieutenant in the Medical Reserve Corps, U. S. Army. In 1912 he was graduated from the Army Medical School and commissioned in the Regular Army.

Dr. Marietta went through the usual vicissitudes of a young medical officer, endeared himself to all with whom he came in contact by his kindly and sympathetic personality, as well as by his unusual intelligence and abilities as a physician, an administrator, and a human being, and spent 14 months in France during World War No. I.

His abilities were soon recognized, and by the time he reached his majority he was practicing internal medicine (in which field he gained recognition as one of the outstanding men in the Army), and served, during his 22 years in this work, as Chief of the Medical Service in most of

the larger Army Hospitals in the United States, Hawaii, and the Philippine Islands. On January 28, 1939, he was promoted from Colonel to Brigadier General, and shortly thereafter assumed his present duties and heavy responsibilities.

General Marietta is a diplomate of the American Board of Internal Medicine; a fellow of the American Medical Association, the American College of Physicians, and the American College of Chest Surgeons; and a member of the Association of Military Surgeons, the Alpha Kappa Kappa and the Sigma Chi Fraternities, and the Masons (32d Degree).

While we can feel sure that the affairs of the Army Medical Center are being and will be ably managed, let us remember, in our thoughts and prayers, this distinguished physician and officer upon whom so much depends.

The individual with a thought is a person weighed down with a responsibility.—MANLY P. HALL.

The Paper Situation

SOME of our readers probably wondered, when they received the February issue and looked at the cover, if their old friend "C.M." was suffering from some form of anemia which would account for its rather pallid appearance; also why it was sent rolled, instead of flat.

Few who are not rather closely connected with the paper business have any idea what the situation is in that industry, so a few words on that subject may prepare you, in advance, for certain coming events. The reason for the pale covers on some of the February Journals was that our supply of cover stock was running low, and though we ordered more in plenty of time, it was impossible to get any of the same old color, and we had to take what was available; and craft paper for the wrappers is so scarce that we had to use a smaller size.

The Government is making unprecedented demands upon the paper industry, in all its branches (we were told, by a paper salesman, that his firm is shipping 125 carloads a month of toilet paper and paper towels to army camps on the West Coast), and all the old certainty in regard to supplies is a thing of the past. Firms that have always furnished a wide variety of colors, sizes, qualities, and weights of cover and body stock, have now reduced their line to two or three selections, and some to only one size, weight, color (white), and quality. They may all have to come to this restriction before the war is over.

The result, for us, of this state of things is that all of our covers, in March and subsequently, will probably be decidedly lighter in color than formerly, because that is all we can get, within reason, and that presently we may have to use white cover stock. Moreover, although we ordered a supply of the 60-pound paper we have been using in the body of the Journal weeks ago (in *plenty* of time, by ordinary standards), it *isn't here*, and the only thing we can get for the March issue is 50-pound paper. We hope our heavier paper will be here for the April issue, but cannot be sure. Of course, if it becomes necessary (which does not now seem probable), we can publish the journal on newspaper stock, but we won't do that as long as better paper is to be had.

If the limitation of paper *sizes* continues, we may even have to change the size of "C.M.," which might be an advantage, in some ways. In any event we will, with God's help, continue to give you the same snappy, practical, helpful information in the type, that you have come to expect from us.

Another phase of the situation that will probably hit you directly before long is based on the fact that the Government is commandeering all the chlorine now used in industry (so the paper men tell us); and as chlorine has been employed in bleaching the sulfite bond papers that are widely used in correspondence, it seems likely that the next batch of letter or bill heads or prescription blanks you order will be a dirty gray color (though the *quality* may be the same), instead of the nice, clear white, to which you have been accustomed.

With these explanations, we feel sure that you will understand and bear with any vicissitudes in the *appearance* of your old friend and counsellor, for when you begin to *read* it you will realize that its *heart* is the same, though its countenance may be considerably altered, as time goes on.

I had no shoes and complained until I met a man who had no feet.—An Arab Proverb.

Facts About Aspirin

PRACTICALLY every home medicine cabinet in the country contains a bottle of aspirin (acetylsalicylic acid or acetosal) tablets, and most active general clinicians prescribe or administer the drug (alone or in combinations, and generally by its chemical name) every day, on a more or less empiric basis, and generally with satisfactory results.

This popularity has a sound basis, for acetosal is a reliable reliever of mild and temporary pains, and its harmful results are so rare and unimportant as to be practically negligible.

The matter of dosage, however, has been almost wholly empiric until rather recently, and it now appears that considerably larger quantities than were required have rather commonly been taken and given.

Slightly more than a year ago, Wolff, Hardy, and Goodell[1] devised a method for the *quantitative* measurement of the pain-relieving powers of drugs, and their experiments have thrown much light on this highly important subject.

They found that the maximum lowering of the pain threshold with aspirin is 35 percent; that this is attained, at the end of two hours, with a *single, 5-grain* dose, and is not increased if the dose is raised to 30 grains; and that the relief gradually

1. See *J. Clin. Investig.*, Jan., 1941.

diminishes after this time, so that, if 5 grains are given every two hours, the maximum relief can be maintained as long as is necessary or desirable. Better results are obtained by giving 5 grains every two hours, than by 10 grains every three hours.

Moreover, the relief obtained from 5 grains of aspirin is not *increased* by adding 5 grains each of acetanalid and acetophenetidin, or 1 grain of codeine, or therapeutic doses of caffeine, quinine, or ergotamine tartrate, though the analgesia is somewhat *prolonged* and there is also a *sedative* effect.

Another finding of interest was that from 30 to 60 cc. of *ethyl alcohol* will produce a somewhat stronger and more rapid analgesic effect than aspirin, with the same type of sedation produced by opiates.

Levy[2] gives general confirmation to most of these reports, and adds extensive details of carefully recorded experiments with non-narcotic analgesics, that are well worth careful study by all clinicians.

With these facts in mind, physicians can now administer these indispensable drugs more intelligently and economically than ever before.

NEXT MONTH

Dr. William Y. Lee, of Philadelphia, will discuss the indications for peritoneoscopy and the information to be expected from it, with many illustrations.

Dr. George B. Lake, of Waukegan, Ill., will present a brief report of a regional (Illinois) meeting of the American College of Physicians.

COMING SOON

"Treatment of Nosebleed" (Illustrated), by R. L. Gorrell, B.S., M.D., D.N.B., Clarion, Ia.

"Local Injections of Colloidal Silver in Tonsillitis," by S. Sabourin, M.D., Bonnyville, Alberta, Can.

Plankton and Sea Water

IN THE midst of extensive naval warfare, many men who escape from wrecked ships will find themselves in the distressing position of the Ancient Mariner ("Water, water everywhere, nor any drop to drink"), because those who try to drink enough sea water to slake thirst, die from it. The reason for this result has not been sufficiently studied. The question is not how much salt water is necessary to keep a man alive, but how much will poison him.

A case has recently been reported, of a Mexican Indian who lived for eight weeks on a barren island, where there was neither fresh water nor ordinary food, supplying his needs for both food and drink by eating *plankton*—the free, floating, small or microscopic organisms of the ocean, consisting of minute vegetables (algae) and animals resembling shrimps a tenth of an inch long—which is present in large quantities practically everywhere in the sea.

Eminent physiologists and biologists have declared that, theoretically, this should be possible, as the plankton contains enough proteins, carbohydrates, fats, and vitamins to support life (in fact, it has been suggested that this complex substance might be compressed and sold commercially as a food source), and if drained of excess sea water should contain enough fluid to keep one going, but not enough salt to be poisonous.

It seems important that experiments along these lines should be made immediately, and that this information should be given wide publicity. It might be practical to include a plankton net in the equipment of all lifeboats.

2.—*Miss. Val. M. J.*, Jan., 1942.

Study the Ads

WAR times change many things for everybody, and pharmaceutical manufacturers are not exempt.

For example, in England most of the able-bodied men (including many of those who were doing medical detailing) have been pressed into government service, so the doctors are decidedly short on the direct, personal information they formerly received from the detail men.

Moreover, in rationing the supplies of paper, a good deal of that formerly used in important and highly instructive direct-mail advertising has been cut off.

This leaves the medical journals as the principal, and in some cases the only medium the drug manufacturers have for telling physicians about new remedies that are being developed and reminding them of the older ones.

If this war goes on for some time (as now seems probable), it may well be that something of this sort may develop in the United States, so it would be a good idea to begin, *now*, to cultivate the *habit* of *studying* the advertisements in your magazine, so that, if or when other sources of information should dwindle, you will not accidentally miss something about which you ought to know.

Subcutaneous Implantation of Testosterone in Male Eunuchoidism*

(A Case Report)

By
CARLOS P. LAMAR, M.D., Miami, Fla.

While cases of male eunuchoidism are not extremely common, it is interesting to know what can be done to restore these patients to a normal status, as shown here by Dr. Lamar.

IN APRIL, 1941, I reported two cases of pre-adolescent eunuchoidism in which I had attempted subcutaneous implantations of testosterone pellets of about 75 mg. each. One patient showed a rapid androgenic response, but disappeared from my observation shortly afterwards; and in the second, secondary infection produced elimination of the pellets from the wound and subsequent discouragement, which made the patient decide on testosterone propionate injections for further treatment.[1]

At this time I wish to report on a third patient, under well-controlled observation, who is receiving periodic implantations of testosterone pellets, furnished by Dr. Max Gilbert, of the Schering Corporation.

Case Report

John M., a shipping clerk, white, age 23, the son of normal parents, has four brothers and three sisters, all normally constituted, but his testicles have been the size of small navy beans ever since he can remember. He denied any childhood disease except whooping cough and any accidental injury to his genitals. He was always slender and taller than the average boy of his age, and went to school up to the eighth grade, with no particular difficulty and just passing marks.

He appeared on physical examination (May 21, 1941), as a tall, slender boy with dark, pale, dry, and occasionally wrinkled skin, devoid of hair except for a sparse growth over his mons. His height was 68⅝ inches; his span, 72¼ inches; his upper segment, 31⅜ inches; lower segment, 37¼ inches (5⅞ inches longer at the lower segment and 3½ inches longer span than height). His weight was 112 pounds, and the scant subcutaneous fat was palpable only over the trocanters.

Systemic examination was negative except for his testicles, which were small and atrophic, as described, and located in a small, smooth, hairless scrotum. The penis measured 3 inches in length and 3 inches in circumference in the flaccid state, and had a small, tapering glans covered with a long foreskin (see Fig. 1).

Fig. 1: Front and side views of patient on May 25, 1939. Note childish face, figure, and genital development, resembling a boy of 13 or 14 years, though he was then 21 years old. (Courtesy of Dr. Ralph Allen).

In May, 1939, and for 14 months thereafter, he had received injections of gonadotropic factor and testosterone propionate, in varying doses, 2 to 3 times a week, and during that time he had experienced: (1) A change in his voice, from a high, infantile pitch to a lower tone; (2) an increase in the size of his penis to the size just given; and (3) the production of erections (sometimes "all day and night") and nocturnal emissions. (Masturba-

*From the Department of Endocrinology and Nutrition, Jackson Memorial Hospital.

tion was practiced every 2 to 3 weeks). Since discontinuing that treatment, in September, 1940, and up to the time when I first saw him, on May 21, 1941, he noticed a tendency of his voice to become high-pitched again at times, and only occasional erections, with no ejaculations, and he felt tired and lifeless.

On May 23, 1941 (see Figs. 2 & 4) four pellets of about 75 mg. each of pure testosterone

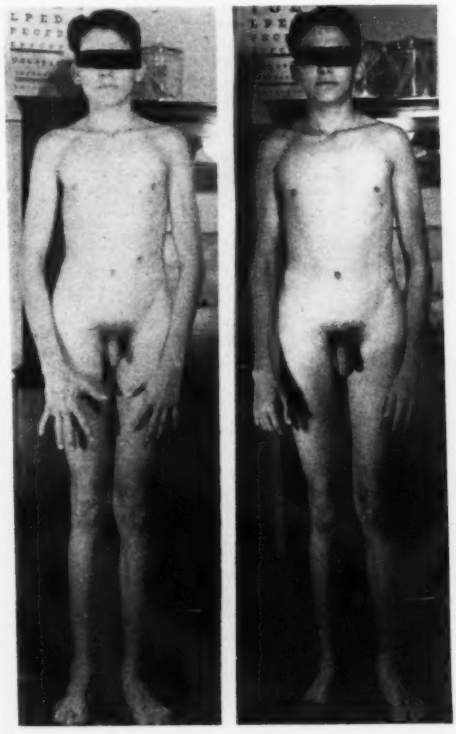


Fig. 2 (at left): Same patient, May 21, 1941, after treatment for 14 months with totals of 100 cc. of anterior pituitary extract (Armour), 250 units per cc.; 50 cc. of gonadotropic factor (Armour); and 65 ampules of testosterone propionate, 25 mg. each (a total of 1675 mg.), and 10 months without treatment. His general appearance and genitals look slightly more mature, but still far less than his age (23 years) would warrant.

Fig. 3 (at right): Same patient, Oct. 20, 1941, after implantations. Note definitely more mature and masculine appearance of the body contours, expression, and genitals.

(Oreton-F, Schering), were implanted under the skin of the lower third of the antero-internal aspect of the left thigh, under Novocain (procaine) local anesthesia, closing with silk sutures. One week later the wound appeared well healed and the sutures were taken out. He reported quite a number of erections and a general increase in strength and pep. Three weeks later (on June 21) the wound partially opened and fragments of one pellet sloughed out. His general improvement, however, continued and he was working 16 hours daily, without tiring, and had gained 8 pounds in weight (up to 120 pounds).

On July 21, one full pellet, and possibly a large portion of another, had come out of the wound, but it had again healed, leaving probably two full pellets, considerably reduced in size by this time. He continued to feel well and weighed 125 pounds. There was appreciable growth of hair on the mons, legs, and arms, but less in the axillae.

On July 30 (nine weeks after implantation), only a small nodule was left under the well-healed scar, and apparently all of the testosterone that was not expelled had been absorbed. He had noticed less frequent erections during the past few days and had lost weight (to 121½ pounds), but otherwise felt very well and active.

On August 13, 1941 (eighty days after implantation), his weight was 118¼ pounds, and his penis measured 3½ inches in length and 3½ inches in circumference (a gain of ½ inch in each dimension). He continued feeling well and strong; his voice had definitely adopted a low, masculine pitch; there was increased growth of hair on the extremities and mons, with a new line of hair growing up to the umbilicus; and the hair was becoming darker and coarser. There was no hair

Fig. 4 (at left): Genitals of this patient, May 21, 1941. Note that the scrotum is smooth, round, and does not show the outline of the testicles, which were the size of navy beans and situated in the center of a mass of soft subcutaneous fat.

Fig. 5 (at right): Genitals, Oct. 20, 1941. The scrotum is now pendulous, wrinkled, and hairy, and the outline of the testicles can be seen in the bottom of the sac; the penis is slightly larger and has a much more virile appearance.

growth on his face. Erections were less frequent, but still occurred from 2 to 4 times a week, spontaneously, and he was working hard, without unusual tiredness.

On August 29 he reported decreasing strength for the past few days and absence of erections for more than a week; and on September 2, 1941, two pellets of testosterone, 75 mg. each, were implanted on the right thigh. This time, in order to attempt to avoid the sloughing out of the pellets, they were implanted intramuscularly, under the fascia lata, and the wound closed with a double suture.

At the time of this writing (October 10, 1941), the wound appears well healed and it does not look as if sloughing will occur, as it did after the first implant. The patient definitely feels the results of the androgenic therapy, as a rapid increase in weight up to 128 pounds (see Fig. 3), and in energy and general wellbeing. Erections occur two or three times daily without undue intensity

and the size of his penis has increased to 3¾ inches in length and 3½ inches in circumference. The testes are now much increased in size (right, ¾ x ½ inch; left, 1¼ x ¾ inch) and the scrotum is pendulous, more rugged, and covered with some hair growth (see Fig. 5).

There is a renewed increase in the speed of hair growth on the body of this patient; hair has started to appear, for the first time, on his chest; and there is a definite change from the female to the male type of pubic escutcheon, with growth of hair over the midline up to the umbilicus. The extremities show definitely increased growth and coarsening of the hair.

Comment

There is no doubt that the subcutaneous implantation of both estrogenic and androgenic substances constitutes an efficient therapeutic method, as has been amply demonstrated by numerous investigators.

In this case, the previous administration of testosterone propionate injections had produced considerable androgenic effects, but the patient volunteered the statement that these effects were remarkably stronger and quicker when the subcutaneous implantation method was used.

The advantages of avoiding continually repeated injections, with the factors of expense and time involved, are obvious. It now remains to determine some accurate method for estimating the dosage and duration of the effects of each implantation.

In this patient, it was evident that, eighty days after the first implant, he was still experiencing noticeable improvement over his previous general condition, and certain results, such as enlargement of the genitals, hair growth, voice changes, and normalization of the nitrogen balance, appeared to be permanent.

No ill effects have so far been reported, and the only possible objections to the method that occur to me are the inconvenience of requiring aseptic surgical technic and the possibility of sloughing and loss of the medication when implanted into the subcutaneous fat. This objection seems to be eliminated by the implantation into the muscular tissue, under the fascia, as has been demonstrated, among others, by Greenblatt[2] and in my own case here discussed.

In other implants that I have performed following this technic the absorption has been uninterrupted and healing has been complete.

It would be highly desirable if some method could be devised whereby we could deposit the testosterone pellets within the muscular tissue without the need for the use of the knife and a wide incision. Biskind, Escamilla, and Lisser[3] have implanted methyl-testosterone and testosterone propionate pellets of very small size through a large-bore needle, but the difficulties of sterilizing the minute pellets, added to the disadvantages of a greatly increased surface of absorption, make it a still imperfect method. Perhaps, if the crystalline substance could be compressed in a cylindrical shape, of different lengths according to the different doses to be given, it could be slipped through the lumen of a large-bore needle into the muscular tissue, without increasing the surface of absorption or the sterilization difficulties.

No recommendations are made regarding dosage, as these would not be soundly based from my short experience with the drug and the method. I hope to be able to continue the study of this and other cases for a longer period and to compare in them, under controlled conditions, the effects of different forms of administration of androgenic substances.

I am indebted to Dr. Ralph Allen for the opportunity of treating this case and for his picture (Fig. 1), and to Dr. Perry D. Melvin for his technical assistance in performing the implantations.

References

1.—Lamar, C. P.: Application of the Sex Hormones, Male and Female, in Their Newer Forms. *J. Fla. Med. Assn., 28:* 203 (Nov., 1940).

2.—Greenblatt, R. B.: Hormonal Therapy of Fibromyomas of the Uterus. *South. Surg. 10:* 339 (May, 1941).

3.—Biskind, G. R.; Escamilla, R. F.; and Lisser, H.: Implantation of Testosterone Compounds in Cases of Male Eunuchoidism. *J. Clin. Endocrinol., 1:* 38 (Jan., 1941).

340 Ingraham Bldg.

BOOKS AT HAND

Every doctor's office should be rich in books. One must have at hand books of literature, books for study, books for diverting reading, and books for immediate reference. Unless things are looked up at once, they are seldom looked up at all. When in the mood for a certain sort of book, the mind is receptive to what that sort of book contains. We read with the greatest benefit when receptive, and we must have the book then, *not tomorrow or next day. By tomorrow a mood may be gone or the desire to look up a fact, an article, or a view may be forgotten. No distant library, however large and complete it may be, is a perfect substitute for even a small library in the house.*—JOHN CHALMERS DACOSTA.

CURSES OF LIFE

The only real curses are ignorance and ill health, sickness, pain. Rich and poor, high and low, if they feel good they find life sweet. You might not like their way of life, but they do. And few come to misery and despair if they live by the rules that are known to all and do as well as they know how.—ROBERT QUILLEN.

The Management of Urinary Stones by the General Practitioner*

By

CHARLES PIERRE MATHÉ, M.D., F.A.C.S., San Francisco, Calif.

Director of the Department of Urology, St. Mary's Hospital;
Urologist-in-Chief, Southern Pacific General Hospital

Most cases of urinary stone are first seen by a general clinician, who should be able to make the diagnosis (or know when to ask the assistance of a urologist) and carry out the management of the case, with or without an operation. Dr. Mathé gives helpful suggestions.

IN RECENT years considerable work has been done to improve the diagnosis and treatment of stones occurring in the urinary organs. In many instances, animal experimentation has corroborated the clinical observations of the masters of the past, while the discovery of the relation of hyperparathyroidism to calcium and phosphorous metabolism, with resultant stone formation, and recent animal experiments which proved the relation of vitamin A deficiency to the formation of stone are also illuminating. The introduction of the ketogenic diet and acidification of the urine have been followed by beneficial results, particularly when employed in properly indicated cases. There has been a trend to underestimate the relation of stasis, trauma, and infection to urinary stones, yet sane-thinking urologists still feel that these factors play a very important rôle.

All the above scientific developments are of great interest, but undue enthusiasm on the part of the exponents of any of the newer theories of stone formation, as well as the diversified methods of treatment, may cause confusion to the general practitioner, who is usually the first one who is called to attend the patient suffering from urinary calculus.

In this paper I shall attempt to clarify the management of urinary calculi by mentioning the etiology of stone; by reporting its relative frequency in the kidney, ureter, bladder, prostate, and urethra; by pointing out points in differential diagnosis; by reviewing present-day dietary and surgical treatment, with the object of removing the stone and preventing its recurrence; and by relating recent personal spectrographic experiments revealing the most interesting constituents of urinary calculi.

Etiology

The etiological factors producing urinary calculus are not yet fully understood, but modern investigators concede that the chemical process concerned in the formation of these calculi is a disturbance of the colloid-crystalloid equilibrium of the urine. The actual mechanism responsible for the precipitation of the crystalloids has not been entirely solved and is still the subject of considerable controversy.

In 1884, Ebstein[1] advanced the theory that there is a protective action of the colloids, which prevents crystalline precipitation and the organization of a stone by keeping the crystalloids in solution. Keyser[2, 3] corroborated Ebstein's theory, and produced urinary stones by activating excessive secretion of the crystals in the urine, to such an extent that the protective colloids were unable to keep them in solution, which resulted in crystallization and the formation of a stone. Interference with the normal action of the colloids, by urostasis, infection, and errors in metabolism, will likewise produce precipitation of crystalline material.

It is not within the scope of this paper to discuss the different combinations of disturbances in the delicate equilibrium that exists between the colloid and the crystalloid constituents of the urine which cause coalescence of crystals, and resulting organization of a stone.

Etiologic factors in the formation of stone may be classified as: (1) Urinary stasis; (2) infection; (3) diet; (4) geographic distribution; (5) age; (6) race; (7) heredity; (8) faulty metabolism; (9) trauma; (10) ulceration of the renal pelvis; (11) disturbances in calcium metabolism present in chronic bone disease, fracture immobilization, and hyperparathyroidism; (12) foreign bodies; and (13) calculi due to the administration of sulfonamide drugs.

Locations of Calculi

During the past ten years I have reviewed the records of many patients treated for urolithiasis in the urologic services of the Southern Pacific and St. Mary's Hospitals, and find that stone occurs in the following order of frequency: (1) In the ureter; (2) kidney; (3) bladder; (4) prostate; and (5) urethra. Most of the stones were impacted ureteral calculi.

The greater number of urinary calculi form in the kidney, where they remain silent and cause few, if any, symptoms. While these are still sufficiently small, they readily descend into the ureter, where they may become arrested at a point of constriction due to anatomic narrowing or stricture formation. When they become impacted, they cause obstruction to the outflow of urine and give rise to a chain of symptoms which are of sufficient severity to call the attention of the attending physician to their presence.

In patients presenting lumbar and abdominal pain, the general practitioner should always suspect the presence of kidney or ureteral stone and should take advantage of present-day diagnostic facilities, such as a complete x-ray examination and urinalysis, in order to make a proper diagnosis.

Charles Mayo observed that practically every patient who came to his clinic for the diagnosis and treatment of right-side ureteral stone had previously had an operation for appendicitis. I have often been asked to examine patients suffering from right-side ureteral calculi, who had devel-

*Delivered before the Eighth Annual Postgraduate Assembly of the Alumni Association of the College of Medical Evangelists, at Los Angeles, Calif., December 7, 1941.

oped an attack of renal colic while still in the hospital convalescing from appendectomy. In this enlightened age, with the greater cooperation between the general practitioner and the surgeon, these cases are becoming less common.

A sudden, severe pain in the loin or in the abdomen, which radiates to the groin or external genitalia, should be looked upon with suspicion by the attending physician. All patients suffering from urolithiasis have red blood cells in the urine, which can be detected by making a proper microscopic examination. In patients presenting gross hematuria, they are self-evident. I have never seen a patient suffering from stone whose urine did not show red blood cells under the microscope. In many patients, crystals, usually of the variety found in the offending stone, are encountered.

Properly made x-ray films will reveal more than 99 percent of urinary calculi. Non-opaque, uric acid and cystine stone are so rare that they offer little difficulty.

Kidney and ureteral stones have been confused with gallbladder disease, duodenal ulcer, colitis, inflammatory processes of the female adenexa, tabes dorsalis and, in rare instances, with intestinal obstruction and pneumonia. The gastrointestinal symptoms—nausea, vomiting, gas, etc.—are a source of error, as they are often attributed to lesions of the digestive tract, when in reality they are reflex in nature or secondary to urinary obstruction or accompanying infection. In doubtful cases one should use all the present-day facilities, such as a complete chemical and bacteriologic examination of the urines collected from the kidneys and intravenous and retrograde urography (see Figs. 1 and 2), including stereoscopic films and lateral uretero-pyelograms.

Fig. 1. Bilateral retrograde pyelogram of patient, age 49, suffering from repeated attacks of right kidney colic and hematuria. Flat film negative for stone. Note filling defect in right kidney pelvis due to non-opaque uric acid calculus. Presence of uric acid crystals along with blood cells in the urine is the clue for the diagnosis of non-opaque uric acid calculi.

Treatment of Urinary Calculi

A brief review of present-day surgical treatment should be helpful to the general practitioner, because, by possessing this knowledge, he will be better qualified to give proper advice to patients suffering from urolithiasis.

Ureteral Stone: The copious administration of fluids often results in the passage of small ureteral stones, and proper dietary measures will aid in preventing their recurrence. From 75 to 90 percent of all ureteral stones can be made to pass, provided the ureter is dilated so that its diameter will exceed that of the stone. The indiscriminate use of metal instruments for dilating the ureter or for grasping, crushing, and actual removal of the calculus, causes injury to the ureter that far outweighs the occasional successful removal of the stone. Ureteral dilatation by the passage of bougies and by utilizing indwelling ureteral catheters gives a greater percentage of cures with the minimal amount of damage. I advise early uretero-lithotomy for impacted ureteral calculi, stones showing no tendency to descend, calculi in the solitary and bifid ureter, and in patients in whom it is impossible to carry out cystoscopic treatments.

Kidney Stone: In the treatment of kidney calculi, it is best to employ pyelotomy for those situated in the pelvis and for non-impacted stones encountered in the calices. In patients presenting staghorn calculi and partially or completely walled-off impacted stones in the calices, it is best to employ nephrolithotomy. In cases of calculi located in the inferior minor calyx, associated with localized ulcerative pyelonephritis and pyonephrosis, the diseased portion of the kidney should be resected, in order to prevent recurrence of the stone, which often occurs after nephrolithotomy or pyelotomy. When bilateral renal calculi are encountered, it is best to remove the stone from the more healthy organ first, and perform radical nephrectomy or conservative removal of the stone in the other kidney at a later date.

Bladder Stone: Small bladder stones can be removed by litholapaxy or by lithotripsy, employing the cystoscopic lithotrite. Larger stones are best handled by the open operation of cystolithotomy. Stones situated in a diverticulum are best treated by diverticulectomy.

Prostatic Stone: Small prostatic calculi can be removed by transurethral resection. The overlying prostatic tissue is excised and the prostatic stones are pushed into the bladder, where they are readily crushed and removed under cystoscopic vision. Larger stones and those that are deep-seated require perineal prostatotomy. In cases in which stones are scattered throughout the gland and in those in which there is associated hypertrophy, perineal prostatectomy is the treatment of choice.

Urethral Stone: In dealing with urethral calculi it is possible to remove the smaller stones through the urethroscope. Impacted calculi, usually situated in the posterior urethra, require urethrolithotomy. Those associated with the rare condition of urethral diverticulum are best treated by diverticulectomy.

Dietary Treatment

I have reviewed the various theories of stone formation, in order that the general practitioner may have a clearer picture of the different etiologic factors which are of practical value in the intelligent treatment of patients suffering from urolithiasis. The exact type of stone that the

patient harbors must be understood in order to obtain a beneficial effect from diet.

Before attempting to treat any case of stone, a complete roentgenologic examination of the genito-urinary organs should be made. Flat films give one valuable information as to the size, shape, and location of the stone. Intravenous urography enables one to determine if the suspected shadow is within the urinary tract, as well as to locate its exact position and to ascertain if it is causing obstruction or interference with kidney function.

Fig. 2. Retrograde pyelogram of solitary kidney of patient, age 58, suffering from anuria and painful swelling of the upper left abdomen of 48 hours' duration. Lower ureteral stone is seen in juxtaposition to opaque catheter. Note spontaneous rupture of pelvis. Death occurred in spite of surgical removal of stone and drainage of kidney and perinephritic tissues. This film emphasizes the importance of immediate surgical removal of impacted ureteral calculi in patients presenting solitary kidney. Unfortunately, in this particular case this procedure was carried out too late.

In addition to the x-ray studies, a careful urine analysis should be made, in order to find out if the stone is of the acid or the more common alkaline variety. The hydrogen ion concentration of the urine should be studied and a centrifugalized sample examined for the presence of crystals. In patients harboring alkaline stones, the urine is generally alkaline and usually contains the same variety of crystals that is found in the stone. The total amount of calcium and phosphorous excreted in the urine in 24 hours should also be studied and, if these elements are found to be increased, determination of their concentration in the blood should be made.

The most satisfactory way of treating any patient presenting urolithiasis is to have a consultation with a competent urologist, who will carry out a complete urologic investigation, including cystoscopy, catheterization of the ureters, kidney function studies, and a complete chemical and bacteriologic study of the urines collected from the kidneys and bladder.

Generally speaking, the acid-ash diet is reserved for the treatment of calculi composed of earthly salts, such as the phosphates of calcium, ammonium, and magnesium. The alkaline-ash diet, however, should be utilized in the treatment of oxalic acid, uric acid, and cystine stones. It is apparent that either of these two diets could be most harmful when utilized on a patient harboring the wrong type of stone.

The dissolution of stones by dietary measures is decidedly rare and one should not expect much from this form of treatment. In 1924, Cromwell[4] observed the disappearance of a cystine stone by intense alkalinization of his patient. Later, Higgins[5] also observed the disappearance of stones of the alkali-earth type by administering vitamin A and an acid-ash diet. Hand[6] reported the successful use of the oral administration of phosphoric acid in the dissolution of bilateral renal lithiasis. Most urologists realize that, although the administration of certain diets occasionally produces the dissolution of a stone, particularly when it exists in the form of loose particles of sand, little benefit can usually be expected from treatment consisting of dietary measures alone.

Most stones existing in the genito-urinary tract are best treated by actual removal, either by a surgical operation or by cystoscopic maneuvers.

In order to clarify the subject, I shall enumerate the specific indications for the use of dietary forms of treatment: (1) In non-obstructing calculus located in a calyx; (2) in patients refusing operation; (3) in cases of bilateral stones, where operation is contraindicated because the patient is a poor risk or there is advanced kidney destruction; (4) in bedridden, immobilized-fracture patients who are forming calculi; (5) in patients complaining of repeated attacks of renal colic and the passage of small stones, in whom the x-ray findings are negative; (6) in alkaline incrustations in the bladder and loosely formed phosphatic gravel and sand in kidneys; (7) and in non-tuberculous calcification and ossification of the kidneys.

In patients presenting the alkaline type of stone, it is important to maintain the hydrogen ion concentration of the urine around 5.0 or 5.5 This can be accomplished by prescribing Haliver oil and administering a diet high in vitamin A, in which much butter, eggs, meat, seafoods, bread, cereals, cheese, rice, etc. are included. In these patients, alkalinity of the urine is either due to a diet deficient in proteins or to infection, by which the urea-splitting organisms render the urine alkaline.

In many cases, diet alone is not sufficient to maintain the proper acidity of the urine, and it becomes necessary to give acid-producing drugs, such as acid sodium phosphate, ammonium chloride, mandelic acid, etc. In those patients presenting stones associated with proteus infection of the urine, sulfanilamide is of great benefit in counteracting infection and preventing further growth of the stone. All patients should be instructed to test the hydrogen ion concentration of the urine by utilizing the simple nitrazene paper test three times a day.

Another important measure is the prevention of recurrence of stone after surgical removal by proper dietary measures. All stones should be subjected to chemical analysis and spectrographic study; the interior of the stone should be cultured, in order to determine the exact type of infecting organism; and the lesions causing urinary obstruction should be corrected at the time of operation.

Eradication of infection is most important, and this can be accomplished by the internal administration of urinary antiseptics, as well as by local treatment consisting of irrigation of the bladder and lavage of the kidney pelvis. Keyser and Randall[7] carried out pelvic lavage with phosphoric and malic acid, with the purpose of dissolving loosely-formed alkaline gravel in the kidneys.

In dealing with uric acid stones we have a different problem. It was formerly thought that these stones were entirely due to excess protein ingestion. Recently the vitamin A deficiency theory has been advanced. There is no doubt that both factors play a rôle, and in prescribing a diet for these patients, they should be advised to avoid substances containing a large amount of purine, contained in the cellular organs, such as liver, brains, sweetbreads, etc. It is also well to give a diet rich in vegetables and milk. The urine should be alkalinized by the internal administration of alkalies or the use of an alkaline mineral water.

If oxalate stones are present, one should attempt to reduce the intake of those vegetables that are rich in oxalates, such as spinach, rhubarb, asparagus, sorel, etc. Carbohydrates should also be forbidden, because their use in excessive amounts favors fermentation by the intestinal bacteria, with the formation of soluble oxalates, which are absorbed and form crystals in the urinary tract. Their formation can be diminished or entirely prevented by the copious use of the various forms of alkalies. Increased fluid intake should also be advised, as small oxalate concretions can be actually washed away.

Cystine stones are products of protein metabolism, and patients harboring this type of stone should be placed on a strictly vegetable diet. In addition, the urine should be alkalinized, because these stones are soluble in an alkaline medium.

Spectrographic Analysis

In collaboration with R. C. Archambeault, spectrographer of the Southern Pacific General Hospital, a complete spectroscopic examination of all calculi recovered from patients treated in the urologic service has been routinely carried out during the past three years, with interesting results. Practically all the stones that were examined contained calcium, magnesium, strontium, sodium, phosphorus, silicon, and boron. Many were found to contain silver, lead, and even gold. More than 50 percent contained iron in appreciable quantity, and all stones examined contained traces of this metal. Tin and copper occurred more commonly than one would expect. Among the rarer elements encountered were aluminum, antimony, barium, bismuth, chromium, germanium, rubidium, titanium, and vanadium.

Comments

The management of urinary calculi falls to the general practitioner, as he is usually the first physician summoned to attend the patient suffering from stone.

Renal colic can begin in the abdomen as well as in the loin, on account of the frequent low position of the kidneys, and although accompanying gastro-intestinal symptoms may be confusing, one should always consider the differential diagnosis between urolithiasis and abdominal lesions. A careful urinalysis, revealing the presence of red blood cells and crystals, will pave the way for the diagnosis of stone.

X-Ray studies, including flat films and intravenous and retrograde urograms, should be made, in order to determine the size and location of the stone and to ascertain the amount of damage and obstruction that have taken place in the kidneys.

The intelligent treatment of urolithiasis includes the removal of the stone, elimination of infection, correction of urostasis, and adjustment of errors in metabolism. The limitations of dietary treatment have been clearly defined.

The general practitioner should always remember that, in practically all patients presenting nephrolithiasis, the calculus will ultimately destroy the kidney that harbors it.

In closing, I emphasize the great importance of collaboration between the general practitioner and a competent urologist, with the object of removing urinary stones and the institution of the proper diet that will aid to prevent recurrence.

References

1. Ebstein, W.: "Die Natur und Behandlung der Harnsteine." Wiesbaden, 1884.
2. Keyser, D.: Recurrent Urolithiasis; Etiologic Factors and Clinical Management. *J.A.M.A.*, 1935, 104:1299.
3. Keyser, D.: The Etiology of Urinary Lithiasis; an Experimental Study. *Arch. Surg.*, 1923, 6:525.
4. Crowell, A. J.: Cystin Nephrolithiasis; Report of a Case with Radiographic Demonstration of Disintegration of Stone by Alkalinization. *J. Urol.*, 1924, 11:545.
5. Higgins, C.: The Experimental Production of Urinary Calculi. *J. Urol.*, 1933, 29:157.
6. Hand, J. R.: The Oral Use of Phosphoric Acid Solution in the Management of Bilateral Renal Lithiasis. *J. Urol.*, 1939, 42:1162.
7. Randall, A.: Prevention of Recurrence of Urinary Calculi. *A. J. Surg.*, 1932, 18:482.
8. Mathé, C. P., and Archambeault, R. C.: Spectrographic Analysis of Urinary Calculi. *Urol. and Cut. Rev.*, 1940, 44.
9. Mathé, C. P.: The Management of Stone in the Solitary Kidney and Ureter. *Surg. Gyn. & Obs.*, 1931, 52:79.
10. Mathé, C. P.: Ureteral Calculus. *Calif. & West. Med.*, 1939, 51.
11. Mathé, C. P.: The Present-Day Management of Stone in the Kidney. *J.A.M.A.*, 1931, 96:657.
12. Mathé, C. P.: The Diagnosis and Present-Day Treatment of Ureteral Stone. *J. Urol.*, 1932, 28:133.

54 Sutter St.

SAGACITY

Sagacity is that quality which enables us to keep immediately available in our minds every bit of knowledge we possess which could possibly be of any help in the care of the patient whom we are treating. The practice of medicine is a mass of little but indispensable items of knowledge. No knowledge is of any value to us unless we have that quality which brings it to our consciousness at the time when we suddenly are in need of it.

—Dover Street Clinic Review.

The Anemias*

A Symposium

Here is the simplest and most practical general outline of the treatment of the anemias that we have seen, given by men who speak with full authority. We are glad to present it to our readers.

THE TREATMENT OF PERNICIOUS ANEMIA

By William P. Murphy, M.D., Boston, Mass.
Associate in Med., Harvard Med. School

Macrocytic Anemias (characterized by the large size of the red blood cells) may be caused by:

1. Vitamin C deficiency.
2. Vitamin B deficiency, usually multiple (thiamin, nicotinic acid, and riboflavin).
3. Hypothyroidism (thyroxin deficiency).
4. Idiopathic macrocytic anemia.
5. Pernicious anemia.

Vitamin C-deficiency is more common than is realized. A diet deficient in fruits is the common cause, although alcoholism is often associated. Petechial hemorrhages appear, or may be the result of applying a blood pressure cuff tightly for 5 minutes. *Treatment:* From 200 to 400 mg. of ascorbic acid (cevitamic acid) should be given daily, by mouth or intravenously.

Vitamin B-deficiency anemia is often associated with pellagra, poverty, alcoholism, or metastatic malignant disease. There may be sores at the corners of the lips and a red tongue. The exposed skin surfaces may show a thickened rash. Severe peripheral neuritis, with pain and muscle atrophy, may be present. *Treatment:* Nicotinic acid, up to 200 mg.; thiamin, up to 400 mg.; and large doses of riboflavin should be given, intravenously, each day until improvement begins. The doses may then be decreased. The prognosis is poor unless a good diet is maintained for years thereafter, as is true of any vitamin-deficiency anemia.

Thyroxin-deficiency anemia is commonly overlooked. One or more of these signs and symptoms should be present: A "rumbling" voice; a full-moon face; pallor; a puffy skin, which is dry and cold; and a low mental state. Many myxedematous patients are of normal weight, or even underweight, so that obesity is not diagnostic of thyroid deficiency.

The anemia may resemble the pernicious type, on the blood smear, or pernicious anemia may coexist. *If larger amounts of liver extract than one would expect are needed to control a case of pernicious anemia, suspect the development of myxedema. Treatment:* Thyroid extract should be given, *for the remainder of life;* liver extract should be administered if macrocytic anemia is present; iron is required by many patients.

Idiopathic Macrocytic Anemia

This condition, which is not usually recognized, is apparently not a deficiency disease. "Aleukemic leukemia" (a meaningless phrase) is represented in this group. It is uncommon.

Clinically, it gives the appearance of pernicious anemia, which may be quickly ruled out by the failure to respond to a potent liver extract. Severe anemia, leukopenia, and thrombopenia are usually found. There is no jaundice. Although the skin may be yellow, the conjunctivae will be white. The spleen or liver may be palpable. No lymph nodes are enlarged. A "hemic" murmur is heard over the heart, such as is heard in any severe anemia. Weakness and quick fatigue are the chief symptoms. It may appear at any time in adult life, but especially after the age of 60 years.

Treatment: There is no response to any therapy except blood transfusions, of which a series of 3 or 4 should be given within a period of 10 days, and repeated when the patient becomes tired again, after an interval. These intervals become shorter and shorter, but these patients can live for many years on transfusions. One such patient has received 157 transfusions over a period of 8 years, and is now feeling well. Use only *the same blood group* for donors, as a "universal" donor's blood will cause a reaction. Be careful not to destroy the patient's veins by cutting down on them.

Pernicious Anemia

The *early symptoms* of pernicious anemia are: (1) Tiredness on slight exertion, such as stair climbing; (2) intermittent soreness of the tongue; (3) short periods of diarrhea or constipation; and (4) numbness, tingling, or "tightness" of the hands and feet, or "cold" sensations. The patient believes the soreness of the tongue is due to hot or irritating food, yet *the tongue looks normal.*

Family history: A valuable guide is obtained by learning that other members of the family had anemia, or "locomotor ataxia" (the neurologic signs formerly confused the diagnosis of syphilitic and pernicious anemia nerve destruction), or died from "cancer" (because they became anemic).

Patients with achlorhydria are good candidates for pernicious anemia. If a patient with anemia has free hydrochloric acid, the probabilities are against its being pernicious anemia.

Treatment: Liver, and *liver alone,* will relieve pernicious anemia. The most concentrated form should be used, or the patient may eat one-half pound of liver daily. The cheapest and most satisfactory method is to give *highly concentrated* (10 to 15 units per cc.) liver extract by *intramuscular injection.* Few patients can afford to take *adequate* amounts of liver extract by mouth.

Rule: Whatever the initial red blood-cell count may be, within 4 weeks after the injection of 35 units of liver extract the patient should have a count of at least 4,000,000. If the count has not reached that point, either (1) the diagnosis is wrong; (2) there is a complicating factor; or (3) the extract is not potent.

Iron may be given during the first two weeks, as the tremendous formation of new cells uses up the reserve iron of the body. This will result in a slightly faster increase of red blood cells and hemoglobin. It is not needed after two weeks.

The *dose* of liver extract must be suited to the patient. Ten (10) units of liver extract will keep

*Presented before the Des Moines Academy of Medicine, November 12, 1941. Reported by R.L.G.

one patient well for 8 weeks; the same dose will maintain another for only one week. The red blood-cell count must be kept at 5,000,000 or more, if paralysis is to be prevented. Ataxia (incoordination) may affect the arms as well as the legs.

If the hemoglobin does not remain high, there may be a complication (bleeding from hemorrhoids or cancer) which is causing an iron-deficiency anemia.

Discussion

Question: Are peptic ulcers and pernicious anemia ever found in the same patient?

Answer: Pernicious anemia and ulcer are never coexistent.

Question: Does true pernicious anemia disappear for a time?

Answer: Remissions may occur for a period of months. One authenticated case had a remission of 10 years. Psychic factors bring on pernicious anemia or cause relapses in some cases, much as they do in diabetes.

Question: What is the average dose of liver extract?

Answer: We give 1 cc. of Lederle's 15-unit, concentrated liver extract every 3 or 4 weeks, to the average patient. The proper interval between injections is soon determined for each patient by repeating red blood-cell counts a few times.

Question: Where is the best place for injection of liver extract?

Answer: Our technic is to use a point high and laterally on the hip, so that it is not pressed upon while the patient is sitting down and is but little disturbed by lying down. A three-inch needle, of 23 gage, is quickly forced into the buttock, the syringe containing the liver extract is attached, and the injection completed.

Question: We find that our technician reports many low red-cell counts. Why?

Answer: Most technicians' red-cell counts are inaccurate. The three most common errors are: (1) Moisture is left in the pipette, which destroys cells; (2) the pipette is not shaken for *2 minutes* after it is filled with blood; or (3) the cells are not allowed to settle in the counting chamber for *2 minutes.* If these precautions are not taken, the cell count will be low.

Question: Do you find that liver extract causes many reactions?

Answer: In all the years that we have been giving liver extract injections, there has been only one true anaphylactic shock. Many complaints about "reactions" seem to indicate that patients are being given impure, histamine-containing extracts. If chills and fever follow an injection, the possibility of leukemia should be considered. If mild reactions do occur, either smaller doses should be given or desensitization should be carried out, by giving a 1-minim dose and then gradually increasing it over a period of several weeks.

Question: What about the anemia occurring in peptic ulcer cases?

Answer: The anemia is often due to vitamin-C, less often to vitamin-B, deficiency in the diet, or failure to absorb them. Either of these vitamins may be given intravenously or intramuscularly. *Bleeding and pain may be relieved by a full diet,* even though the patient has not been on such a diet for years.

Question: Do you feel that a transfusion is as effective when a chill or slight fever follows?

Answer: A chill or fever does not decrease the value of a transfusion.

Question: What does "flushing" or fullness in the head following an injection of liver extract indicate?

Answer: The extract contains histamine or choline, or it has been given in a vein.

Question: How can a good response to liver extract be foretold?

Answer: At the end of 5 days after the injection of 20 units of potent liver extract, the blood smear should show that at least 30 percent of the red cells are young forms (reticulocytes).

IRON DEFICIENCY ANEMIAS

Willis M. Fowler, M.D., Iowa City, Iowa
Associate Prof. of Med., Univ. of Iowa

IRON-DEFICIENCY (formerly called secondary) anemias are common at puberty, due to menstruation, rapid maturation, and frequently, a deficient diet.

Infants have an excessive demand for iron. Their reserve, obtained from their mother, is constantly being drawn on and their intake is very low. Even if the mothers are anemic, the baby will not be anemic at birth, but anemia will appear within a few months. Premature babies and twins especially tend to be anemic. *Treatment:* As this is a simple iron-deficiency anemia, the treatment consists of ferric ammonium citrate, in a 1-percent acqueous solution, added to the baby's formula, or elixir of ferrous sulfate.

Nutritional Anemia

Nutritional anemia is uncommon, represents a low intake of iron, and usually is mild. *Treatment:* Administration of ferric and ammonium citrate, ferrous sulfate, or reduced iron.

Chlorosis: No true cases of greenish-tinged skin have been seen, yet a hypochromic anemia at puberty is common, due to an excessive demand for and a low intake of iron.

Chronic hemorrhage is the most common cause of iron-deficiency or secondary anemia. Hemorrhoids, intestinal cancer, peptic ulcer, and menstruation are frequent causes of repeated, unnoted blood loss. Usually the red blood cells are small (microcytic).

Pregnancy iron-deficiency anemia is due to an excessive demand for iron, a low intake, and frequently to achlorhydria, which is common in pregnancy.

Idiopathic Hypochromic Anemia

Idiopathic hypochromic anemia is found in women almost exclusively (96 percent). It may follow any of the causes just mentioned, or may be associated with them.

Symptoms: Chronic and insidious onset of glossitis ("sore tongue"); paresthesia (numbness, tingling, extremities "go to sleep"), without neurologic findings to indicate pernicious anemia or a nerve lesion; dysphagia; enlargement of the spleen in some cases; spoon-shaped finger nails; hypochlorhydria; and a hypochromic (low hemoglobin), microcytic anemia.

Difficult or uncomfortable swallowing is a common symptom, which disappears after iron treatment. In two cases admitted to the University of Iowa Hospitals, carcinoma of the esophagus had been suspected, due to the severe dysphagia and secondary (iron-deficiency) anemia.

Treatment of All Iron-Deficiency Anemia

Large doses of iron are needed to clear up many

of these anemias, although I have shown that moderate-sized doses are often as effective. *Ferrous sulfate* is effective in much smaller doses than any other iron preparation—2 Gm. (30 grains) daily. All ferrous preparations are absorbed better than ferric ones. Any iron salt is irritant*, so the patient should always be instructed to take such medication with meals. *Reduced iron* is the least irritating. Its dose is 3 Gm. (45 gr.) daily. Ferric and ammonium citrate is not usually effective unless 6 Gm. (90 gr.) are taken daily.

A sharp increase in reticulocytes (reticulocyte crisis) and a gradual increase in hemoglobin and red blood cells should follow the administration of *adequate* doses of iron, unless blood is still being lost by bleeding from intestinal cancer, ulcer, or other source. The response to iron therapy is slower if hypochlorhydria is present, although I have not found that the addition of hydrochloric acid hastens the regeneration of blood.

Maintenance doses of iron must be given to women with idiopathic hypochromic anemia for many months or years. It is best given for a period of 3 weeks and withheld for 3 weeks, repeating indefinitely. Such patients apparently will require iron the rest of their lives. Some patients with a low hemoglobin level respond well to iron, but have a tendency to relapse back to the former level even when treatment is continued, so apparently a low hemoglobin percentage is normal for them.

*Colloidal preparations of iron show this property little, if at all.—Ed.

Discussion

Question: Is the achlorhydria associated with iron-deficiency anemias affected by adequate iron treatment?

Answer: There is no change in the achlorhydria, although the patient's digestion may be improved.

Question: Should iron be given to transfusion donors?

Answer: I have made studies on all donors. When iron is given to them it helps to stimulate iron replacement and a normal blood level is reached in 35 days after the transfusion, instead of the usual 48 days, thus saving as much as 3 weeks of time between transfusions.

Question? Do repeated blood transfusions tend to slow the rate of blood formation in the donor?

Answer: Hemoglobin regenerates as well after the twentieth transfusion as after the first, if adequate amounts of iron are given.

ILLNESS AND THE COMMUNITY

Illness, beyond doubt, affects the community as a whole, but there is equally no doubt that the individual himself will always remain the only true object of the direct and truly scientific investigation of the processes called illness and health. A community can no more be ill with schizophrenia than it can with pneumonia.—Gregory Zilboorg.

PREJUDICE AND PAIN

The atheist does not merely disbelieve; he hates religion. And the explanation may be found in something that religious people did, perhaps in his childhood, to hurt his feelings or shame him or wound his ego. A prejudice is not a principle; it is the pain of an old wound that never healed. A man isn't even free to form his own prejudices. They are forced on him by the hurts he suffered in youth.—Robert Quillen.

LOVE IS A NECESSITY

All of our troubles come from the fact that we think there are circumstances in which we may deal with human beings without love, and there are no such circumstances.—Tolstoi.

REALISM AND IMAGINATION

There are men who boast of their realism. They see things just as they are. It is nothing to boast about. There is a much finer kind of sight. We must push out our horizons with imagination.—Grove Patterson, Editor, *Toledo Blade*.

CULTURE

Culture is not just an ornament; it is the expression of a nation's character, and at the same time it is a powerful instrument to mould character. The end of culture is right living.—Somerset Maugham.

Differential Diagnosis in Diseases of the Liver

Compiled by I. S. TROSTLER, M.D., F.A.C.R., F.A.C.P., D.A.B.R., Chicago, Ill.

Disease	Liver					Jaundice	Ascites	Urine	Fever	Spleen	Remarks
	Size	Consistency	Edges	Palpable	Painful						
Hypertrophic Cirrhosis	Enlarged	Firm	Rounded	Yes	Yes, and tender	Present	Absent early, but present in later stages	Urobilin in quantity		Greatly enlarged	Hematemesis early; brown spots on face and exposed parts; alcoholic history.
Atrophic Cirrhosis	Shrunken	Hard and uneven	Irregular	Yes	Frequently	Frequently but not always present	Present			Considerably enlarged	Gastric hemorrhages are frequent.
Syphilitic Hepatitis	Irregularly enlarged; often lobulated	Firm; may be nodular	Irregular	Yes	Frequently	Frequently but not always present	Frequently but not always present	Urobilin present		Enlarged	Gastric hemorrhages are frequent; Wasserman test usually positive.
Catarrhal Jaundice	Slightly enlarged	Firm	Regular	Usually	Yes, and tender	Present	Absent	Dark colored	Slight	Usually enlarged	Pulse usually very slow.
Hepatic Abscess	Irregularly enlarged	Irregular		Yes, and with rub	Yes, and tender	Usually present	Usually present		Irregular; often with chills	Usually enlarged	Perihepatic friction rub very often present.
Cancer of Liver	Usually enlarged	Hard and nodular	Irregular	Yes	Yes	Usually present	Usually present		May be slight	Not enlarged	Cachexia early and progressive
Acute Yellow Atrophy	Small, except at first	Soft		Not as a rule	Yes	Deep and dark	Usually absent	Contains leucin and tyrosin		Usually not enlarged	Delirium and sleeplessness usually present; Bleeding from mucus membranes.
Amyloid Degeneration of Liver	Uniformly enlarged	Firm	Smooth	Yes	No	Absent	Absent	Albuminuria		Enlarged	History of long standing infection (tubereulosis, syphilis,) etc.
Ecchinococcus Cysts of Liver	Considerably but unevenly enlarged	Elastic and fluctuating	Smooth and even	Yes	No	Sometimes present	Absent		Irregular	Not enlarged	Exploratory puncture yields fluid containing scolices of infecting worms.
Hepatic Stasis. (Passive Congestion)	Enlarged	Firm	Smooth and even	Yes	not markedly	Absent or slight	Present if legs or thorax are edematous	Alnuminuria		Not enlarged	Almost always a complication of cardiac or pulmonic stasis.
Leukemia	Greatly and evenly enlarged	Firm	Smooth	Yes	Tender	Absent or slight	Often present		Often 102° to 104° F., in acute cases	Greatly enlarged	Petechial hemorrhages frequent; blood study is usually diagnostic.
Weil's Disease (Spirochetal Jaundice)	Enlarged	Firm	Smooth	Yes	Yes	Present	Absent		Present but varying	Enlarged	Muscle pains. Usually lasts from 10 to 14 days and ends in uneventful recovery. Spirochaeta icterohemorrhagica.

A Living for the Doctor

The Business of Medicine and the Art of Living

Dr. Lee D. Van Antwerp

Our New Associate Editor

WE ARE fortunate in having been able to add the name of Dr. Lee Douglas Van Antwerp to our list of Associate Editors, and are taking this opportunity to introduce him to our readers.

Dr. Van Antwerp was born, of Dutch parentage, in Pittsburgh, Pa., August 3, 1900, but his family moved soon after and he attended the public schools in Rockford, Michigan, and later the University of Michigan, from which he received his A.B., in business administration, in 1923. He worked for four years in public accounting and personnel and business management, after which he returned to the University and was awarded his Doctorate in Medicine in 1931. His internship was served at Miami Valley Hospital, Dayton, Ohio, and he was then appointed to the staff of the Undercliff Sanitorium for tuberculous patients, at Meriden, Connecticut, where he has been on duty ever since.

Courtesy of Underwood & Underwood

LEE DOUGLAS VAN ANTWERP, A.B., M.D., F.A.C.P.

In 1926 he was married, and has a daughter and a son.

During his medical course, Dr. Van Antwerp joined the Alpha Kappa Kappa fraternity and became much interested in its work. In 1931 he was appointed an associate editor of its official publication, *The Centaur,* and in 1935 was made editor-in-chief, which position he still holds, along with membership in the national council since 1936. He has also been much interested in military activities and has held commissions in the Medical Reserve Corps and the National Guard. At present he is acting chief surgeon of the Connecticut State Guard, with the rank of Major.

Dr. Van Antwerp is a fellow of the American Medical Association and the American College of Physicians, a member of the American Association of the History of Medicine, the Association of Military Surgeons, and the Holland Society, and has made a number of contributions to medical literature and to those of medical and fraternity history and of his non-bookish hobby, which is the collection and study of antique and modern firearms.

We feel that this keen and versatile young phthisiologist will be a valuable addition to our staff, and are sure that he will be glad to answer any questions in his special field of diseases of the chest that our readers may desire to ask.

★ Notes and Abstracts ★

The Problem of the Outlawed Note

'I CAN give you a note for my past due account, and that's all I can do," the patient offered.

"Give me a mortgage on your building lot on Hillcrest Street to secure the note, and I'll give you all the time you want," Doctor Medico agreed. The note and mortgage were duly signed and executed, the patient left the country, and both note and mortgage "outlawed."

Then, one fine morning in June, the doctor was astonished to find in his mail a check from the debtor for one year's interest on the note, which he promptly endorsed on the back thereof, but the patient failed to pay anything further, land values on Hillcrest Street took a boom, and the doctor started to foreclose his mortgage.

"The mortgage is outlawed, and you can't foreclose," the patient contended.

"You made a payment that renewed it," the doctor retorted.

"All I paid was the interest on the note, which renewed the note, but not the mortgage."

"The mortgage was merely incidental to the note. You paid the interest without specifying that it was on the note alone, and your payment renewed both note and mortgage," was the doctor's final contention, which has been upheld by the American courts.

"A mortgage is an incident to the debt it secures. It follows the debt when the debt is assigned, and it is discharged in whole or in part when the debt is paid in whole or in part. It would seem to follow logically that the legal effect of a payment upon a note in renewing or reviving the debt, or preventing the bar of the statute, would also apply to the mortgage as incident thereto, certainly as between the original parties," says one court in laying down the general rule.

It should be pointed out, however, that if the debtor had sold the property after the mortgage was given, the payment would not revive the mortgage as against a new buyer.

M.L.H.

Tell Your Patients

IF YOUR patients and friends *know* what State (politicalized) Medicine would mean to them, they will be apt to *do something* to head it off. Give them a chance to know. Send 25 cents to Public Relations Bureau, Medical Society of the State of New York, 292 Madison Ave., New York, N. Y., for 6 copies of their little booklet, "Give the Doctor a Break," and pass them on. When you've seen it, you will probably order several hundred for general distribution.

I consider CLINICAL MEDICINE a friendly publication. The quality of the articles is fine.—L.M.M., M.D., New York.

Getting Remittances

A LITTLE trick that brings in many remittances promptly, which otherwise would be indefinitely delayed, is to send with the statement a self-addressed, "Business Reply Envelope," on which you pay the postage only if and when it is used. Many farmers and other people who do not keep a supply of postage stamps in the house will put a check or currency in one of these envelopes and drop it in the mail box at once.

There is no complicated red tape about using this method. Just go to your postmaster, tell him what you want, and fill out the proper form (for which there is no charge). If you do not know the procedure, he will tell you.

When you receive your permit number, take it to your printer and have him print as many envelopes as you want. When they are returned you pay the postage, plus one cent for handling charges, on every letter that *comes back* (no others), the same as you would pay postage-due charges. It is worth paying the three or four cents to get several dollars *now*—not next year!

R. L. GORRELL, M.D.

Clarion, Ia.

Mental Discipline

AFTER they have said that the study of Latin in school is a waste of time, the majority of people rest their case. In an equally off-hand way they dismiss the importance of mathematics, except for those who intend to go into engineering or similar careers.

Such people completely miss the point.

For most youngsters the mastery of Latin and solid geometry is no more "useful" than skill in horseback-riding or contract bridge. Much depends on what we mean by useful.

The kind of mind that can master Latin and higher mathematics is a trained and disciplined mind that can be concentrated on new and different problems and can probably solve them. Such a mind can attack contract bridge, for example, and comprehend the fine points of the game more readily than a mind that has never been compelled to function with precision.

Aside from its social aspects, horseback-riding is an excellent training in muscular coordination. A boy might spend time and money in learning to ride. His time would not be wasted even though he never rode in his adult life. In whatever physical activity he engaged, his training in horsemanship would be valuable.

Just so, after studying Latin and mathematics, a young man's mind is better able to cope with any mental problem that may be presented. If he has learned to solve original problems in geometry, he will know something about how to attack any other original problem, whether in business, law, or science.—*Scully-Walton Magazine.*

The Seminar

Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussions of any or all problems. Discussions should reach this office by the 5th of the month following the appearance of the problem. Send your problems and discussions to The Seminar Dept. care CLINICAL MEDICINE, Waukegan, Ill.

Problem No. 1 (Diagnostic)

Presented by A. W. Diddle, M.D., Iowa City, Ia.

(See CLIN. MED., Jan., 1942, page 22)

ECAPITULATION: A girl of 15 years had symptoms of appendicitis, was operated upon, and the wound drained for 10 days. Three weeks later she had a similar attack, with temperature 101.5°F. and 13,500 leukocytes, and was again operated upon, disclosing an abscess between the skin and the right rectus sheath, which was drained.

After recovery, she was thoroughly studied, by physical and laboratory methods, and no abnormalities were recognized. A roentgenogram of her colon showed an *appendix* four inches long, which the roentgenologist considered normal.

One month later, all the previous symptoms recurred; her temperature was 101°F.; her right lower quadrant was tender and rigid; and an indefinite mass could be palpated there.

Requirements: State your tentative diagnosis, *giving reasons.* What further studies would *you* have made?

Discussion by A. E. McMahon, M.D., Menomonie, Wis.

The occurrence of attacks of pain in the right lower quadrant of the abdomen, *during the menstrual period,* suggests two possibilities: (1) *Endometriosis,* and (2) *rupture of a corpus hemorrhagicum,* with intra-abdominal bleeding. The time relation between the attacks of pain and the menstrual period also serves to exclude other causes of right lower-quadrant pain.

The patient was subjected to a careful clinical and laboratory examination, which yielded little information, except that the appendix was normal, in the opinion of the roentgenologist. This examination, however, was undertaken in an interval between periods, and when this is considered with the fact that all the attacks of pain occurred during a menstrual period, one can hardly escape the conclusion that something caused the illness, which was operative only during menstruation.

The patient had the symptoms and findings consistent with those of appendicitis, but one would scarcely expect to see three successive attacks of appendicitis occurring during menstrual periods, and at no other times.

Endometriosis is characterized by extra-uterine implants or inclusions of endometrial tissue, which undergoes the same cyclic changes as the uterine endometrium. Pre-menstrual hypertrophy and engorgement cause the isolated tissue to swell, thus producing palpable masses; extravasation of blood into adjacent tissue occurs; and, if the extravasated blood is in contact with the peritoneum, it produces pain, and may cause reflex nausea and vomiting. Fever and leukocytosis are due to absorption of extravasated blood, and localized tenderness is caused by peritoneal irritation. These implants undergo recessive changes, synchronous with the normally-placed endometrium, and within a few days palpable masses disappear, and there is cessation of pain and tenderness.

Naturally the symptoms of endometriosis will vary according to the location of the ectopic tissue. A recent report told of a case in which an implant in the lower ileum produced several attacks of acute mechanical intestinal obstruction, coincident with the menstrual period. The patient was subjected to resection of the segment of ileum containing the ectopic endometrial tissue, with end-to-end anastomsis of the severed ends of bowel. No further attacks of intestinal obstruction occurred.

Rupture of a corpus hemorrhagicum, with free blood escaping and coming in contact with peritoneal surfaces, will likewise cause pain, nausea, fever, and leukocytosis, very much like appendicitis. The similarity is so great that it is, at times, extremely difficult to differentiate the two satisfactorily.

When a corpus hemorrhagicum ruptures, the bleeding is not often a serious matter, as regards blood loss, but even a small quantity of free blood in the peritoneal cavity will cause pain, and often nausea or vomiting, as well as fever, leukocytosis, and localized tenderness.

The symptoms usually are not severe, and subside within two or three days. There have been reports in the literature, however, of cases in which rupture of a corpus hemorrhagicum was accompanied by bleeding of serious proportions, necessitating operative intervention, much the same as in ectopic pregnancy with rupture.

In this case, a careful bimanual examination, with the patient anesthetized, if necessary, *made during menstruation,* would probably be indicated. Failing to find masses suggestive of endometriosis, a colpopuncture should be performed. Recovery of blood from the cul-de-sac of Douglas would constitute sufficient evidence to establish the diagnosis of rupture of a corpus hemorrhagicum.

Discussion by L. E. Williams, M.D., Kansas City, Mo.

It appears from the history of this case that the patient was operated upon for appendicitis, followed by drainage of pus for 10 days, and that, three weeks later, she had another similar attack. It is not clear, however, whether the wound had healed or was still discharging when she was seen by the present attending physician. I get the impression that it had healed.

The patient was operated upon a second time, during her menses, and an abscess was found between the skin and the rectus sheath of the abdominal wall. A month later, again during her catamenia, she had another attack which was characteristic of a ruptured appendix. What did the patient have in the first instance? What operation was performed? What, if any, relation exists between the menstrual cycle and her attacks? What is the matter with the patient now?

This girl may have had an appendiceal abscess which was simply *drained* by the first surgeon. We know that the appendix was not removed because the roentgenogram revealed an apparently normal appendix. This does not necessarily mean that there had been no abscess of the appendix, for it is entirely possible that it ruptured at the tip, forming a local extraperitoneal abscess, and that, following drainage, it returned to an apparently normal state. As the surgeon moved away, it is not only possible, but probable, that the postoperative care was not what it should have been, that drainage was inadequate, and for want of proper care the wound was contaminated, leading to infection and abscess of the abdominal wall.

I do not think that it is a mere coincidence or due to lower resistance that these attacks occurred at the menstrual period. At this time the uterus and adnexa are congested and heavier. The tubes are near the appendix and, since there is reason to believe that the patient has had appendicitis, it is probable that the right ovary and tube may be involved in adhesions which interfere in some way with the normal menstrual process.

The diagnosis of this case can be determined definitely only by laparotomy. There is nothing in the history of this case to suggest the probability of salpingitis or tubal pregnancy.

My tentative diagnosis is: (1) *Appendiceal abscess;* (2) *ruptured ovarian cyst,* with hemorrhage into the abdominal cavity.

Discussion by Wilfred C. Curphey, M.D., Sausalito, Calif.

In analyzing this case, one is impressed with several points in the information supplied. First, an operation was performed without any relief of symptoms; next, the appendix is still present and must be considered; third, a lesion in the gastrointestinal tract or the urinary tract has apparently been eliminated. Fever and leukocytosis indicate the presence of infection; whether this was present before or was introduced by the operation we do not know. Another significant fact is that these attacks have always been associated with a menstrual period.

The symptoms complained of could result from any one of the following: appendicitis, salpingitis, ectopic gestation, strangulated ovarian cyst, ruptured ovarian follicle, Meckle's diverticulitis, pyelitis, uretral stone or stricture, regional enteritis, and endometrioma.

We will assume that all intestinal disorders and renal possibilities have been ruled out by the examination. It is also to be assumed that the examination has eliminated the presence of an ovarian cyst and that the possibility of ectopic gestation is likewise excluded by the necessary laboratory procedures, such as the Friedman test. The rupture of an ovarian follicle during menstruation is quite remote. We are, therefore, considering three possibilities: *appendicitis, salpingitis,* and *endometrioma.*

Since there is no information regarding the findings on pelvic or rectal examination, we must depend upon the history available. We know that any abdominal pain localizing in the right lower quadrant, with fever and leukocytosis, should always suggest appendicitis. However, it seems quite significant that these attacks should always occur during menstruation. This last fact strongly suggests a pelvic pathosis which is aggravated by menstruation. Salpingitis can be so influenced, but endometrioma is especially activated at this stage of the menstrual cycle. The presence of fever and leukocytosis does not necessarily mitigate against this possibility, since many cases of endometrial transplants have been reported with fever no higher than this, and with leukocytosis, particularly if hemorrhage into the peritoneal cavity occurs.

I am inclined to believe that this is an example of *endometrioma.* At any rate, an exploratory laparotomy is in order, since it seems quite impossible to undeniably exclude a dangerous surgical possibility such as acute appendicitis, and since the other apparent possibilities are also surgical in nature.

Discussion by Dr. Frederick E. Arble, Carrolltown, Pa.

Tentative diagnosis: Oophoritis, probably caused by a complete twisting of the pedicle.

Reasons: Ovarian cyst, in this case, could probably be ruled out because most of these cases reveal prolonged disturbance of menstruation and irregularity in the time and amount of flow.

I believe that her previous disturbance was due to a partial torsion, which will produce symptoms in proportion to the vascular obstruction, and may be relieved by posture. In the last attack there was probably a complete twisting of the pedicle, which will produce a sudden acute attack, with localized aseptic peritonitis, after a few hours. The symptoms of oophoritis do not differ from those of acute inflammation of the fallopian tubes or acute peritonitis. I believe that the former operation, in which the abscess was found between the skin and rectus sheath, is incidental.

Discussion by G. B. Putnam, M.D., Marceline, Mo.

It should have been possible to obtain some records of the previous operation, to throw some light on this case.

I feel that the work-up, while she was in the hospital for the second time, should have ruled out Potts' disease and perinephritic abscess, and any lesion in the colon, sigmoid, or rectum.

Since the last two episodes were coincident with the patient's menstrual periods, the history should be closely investigated with respect to the function of the pelvic organs. A bimanual examination, either through the rectum or vagina, should reveal any pathosis. Enlargement of the tubes, accompanied by a cervical discharge, would suggest salpingitis or tubo-ovarian abscess, which latter process is more active at menstrual periods.

The most difficult differential diagnosis is *regional enteritis or ileitis.* This is my tentative diagnosis at present, because it is a recurrent disease which tends to become chronic, with the formation of sinuses and a mass in the right lower quadrant. It can be settled by following a barium

meal through the gastro-intestinal tract, the inflamed area showing only a string-like flow of barium, accompanied by some backing up above the lesion.

Discussion by W. B. Palmer, M.D., Furman, Ala.

More operations are performed in the region of the lower right abdominal quadrant than in any other part of the body. Many, if not most, of these are for the removal of the appendix. As we have, in physics, units of length, mass, and time, by allowing for the elasticity of language, we can adopt appendicitis as the unit of diagnosis for this region.

Not less than fifty diseases have been mistaken for appendicitis, even such as gastric and duodenal ulcers, perforating nonspecific ulcer of the ascending colon, mesenteric lymphadenitis, an exacerbation of chronic epididymitis, and many others. Mistakes are made in the different regions of the body, according to the position of the appendix, whether high ascending, in the right iliac fossa, or in the lesser pelvis. When some abnormal or pathologic condition of the female organs occurs, the diagnosis becomes still more complicated.

An unmarried girl of 15 years can have any disease of the genital organs that a married woman can have, even salpingitis and ectopic gestation. As no information along this line was given, the discussion will be confined to conditions that can produce such symptoms in a virgin. The question is then narrowed to the *appendix* and the *right ovary*. Roentgenologic evidence in this case was negative, and although this was given by an expert, it is not conclusive, but helpful.

Often adhesions exist between the ovary and the appendix. If there are no adhesions, there may be an anatomic relation between these organs, because of ligaments and lymphatics. For instance, a cord may run from the infundibulo-pelvic ligament to the right, into the mesoappendix, and also to the left, into the mesosigmoid. If such conditions exist, the hyperemia of the ovary during menstruation may produce symptoms similar to those of appendicitis. If a focus of infection in the appendix or periappendix remains from an old inflammation, this may become active during the menstrual period.

Consideration must be given to the possibility of a ruptured graafian follicle, but this occurs midway between menses; also of a ruptured corpus hemorrhagicum, which occurs later, even at menstruation.

The pain began in the epigastrium and gradually localized in the right lower quadrant, as usually happens in an attack of appendicitis. This true visceral pain is carried by the afferent nerves to the celiac plexus, with a vague localization in the epigastric or umbilical region. In a few hours, more or much less, it is localized, frequently at or near McBurney's point. The tenth, eleventh, and twelfth spinal segments furnish the nerve impulses going to and from the area of the appendix, hence there is frequent hyperesthesia of the skin over this area; also of the deeper structures. The degree of fever and the leukocyte count are typical of an attack of appendicitis.

Leukocytosis can be caused by many insults to the body, even throwing cold water on it, or by a localized chemical peritonitis, which could occur with the rupture of a corpus lutem hemorrhagicum. Ovarian pain usually *begins* in a lower quadrant.

The localized pus that was drained could have been caused by some infection as a result of the operation, but more likely from drainage from a deeper structure, resulting from partial healing between the infected area and the surface.

Symptoms of any disease may not always be exactly like those in textbooks, for these can give only standards—only what happens in the average case. Each person is distinct from every other, and so is every other organism. That is where the knowledge and judgment of the attending physician are brought into play, to *individualize*, so as to reach a diagnosis and give the special treatment needed.

Discussion by W. E. McKinley, M.D., Jewell, Kans.

In a young girl of 15 years, at a period in which dermoid cysts of the ovary are most common, and in whom each attack of abdominal pain seemed closely coincident with her menstrual periods, one has reason to suspect a *septic dermoid cyst of the ovary*.

My diagnosis No. 2 would be *pyosalpinx;* and my third choice an *inflamed appendix*, adherent to the ovary or tube.

It is, however, possible that roentgenograms might either confirm or eliminate the tumor if it was, or was not, a dermoid cyst.

Solution by Dr. Diddle

Laparotomy revealed normal pelvic viscera. A *perforated inflamed appendix* was found. The appendix that was "wholly visualized" was only the proximal three-fourths; the distal two inches were gangrenous and had perforated, with the formation of an appendiceal abscess.

No laboratory aid in diagnosis is infallible.

Problem No. 3 (Medical)

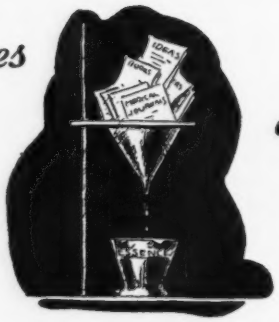
Presented by John T. Mosley, M.D., Winnfield, La.

A 70-YEAR-OLD white man, who had, previous to his present illness, been active and in good health, came to me complaining bitterly of inability to sleep, due to extreme shortness of breath. His respiratory rate was 50 per minute and regular; blood pressure, 125/88; heart sounds, normal; pulse rate, 82 per minute and regular; temperature, 98.6°F.; hemoglobin, 70 percent; leukocytes, 8,800; and red cells, 3,400,000. There was no edema, and a roentgenogram of his chest showed a heart of normal size and clear lung fields. There was a trace of albumin in the urine.

Some 36 hours after the office visit, the patient lapsed into a semi-comatose condition and developed Cheyne-Stokes breathing. Following treatment he regained his full mental faculties and Cheyne-Stokes breathing ceased, but some slight dyspnea still persisted.

Requirements: State your diagnosis and what further studies you would have made, and outline the therapeutic management of this case, *giving reasons.*

Clinical Notes and Abstracts



Medico-Military Notes

Procurement and Assignment of Physicians, Dentists, and Veterinarians

THE Procurement and Assignment Service of the Office of Defense Health and Welfare Services has prepared a special questionnaire which will be sent, as soon as possible after February 16, 1942, to every physician, dentist, and veterinarian in the United States, *regardless of age, sex, physical condition, citizenship, or employment;* and this document should be filled out and returned as soon as possible after its receipt. This will supplement the information contained in previous questionnaires and will make it possible to place each member of these professions in the position or work for which he is best qualified.

On the enrollment form which comes with the questionnaire, the physician, dentist, or veterinarian enrolls himself with the Procurement and Assignment Service, and indicates his preference for military, governmental, industrial, or civil positions where he may be required. Those who so enroll will receive a certificate and be privileged to wear insignia indicating that such enrollment has been made.

The present needs of the Army and Navy are for physicians less than 36 years old, and those in this group who desire commissions at once should write to the Procurement and Assignment Service, 601 Pennsylvania Ave., N.W., Washington, D.C., stating their qualifications. Those who appear to be qualified will receive application forms for commission in the Army or Navy. Physicians more than 36 years old, and all dentists and veterinarians, should await the receipt of the enrollment forms.

Any member of these professions who does not receive a questionnaire and enrollment form should write to the National Roster of Scientific and Specialized Personnel, 916 G. St., N.W., Washington, D.C., within six weeks after the announcement is made, in this or other professional publication, of the time when the circulation of these forms begins.

Physicians Needed in Panama

PHYSICIANS are badly needed at the Panama Canal, and the Civil Service will receive applications for positions, at $4,000 a year, until further notice. Applicants must be between 25 and 35 years old, graduates of Class A medical schools, with 1 year of hospital experience. Get particulars from your first- or second-class post office, or write to the U. S. Civil Service Commission, Washington, D. C.

Call For Student Nurses

WITH so many registered nurses serving with the armed forces and the Public Health Service, the need for more of them will grow greater, so it is important that as many young women as possible should undertake a course of training in this field, which will give them a worthy and profitable profession when the war is over. Those who wish further information should write to The Nursing Information Bureau, 1790 Broadway, New York, N. Y.

Orthopedic Mechanics Wanted

THE army needs trained mechanics to work on orthopedic appliances (braces, artificial limbs, special shoes, etc.), and applications for such positions, at a salary of $2,000 a year, may be made until further notice, on the basis of experience. Particulars and blank forms may be obtained from any first- or second-class post office or from the U. S. Civil Service Commission, Washington, D. C.

No Vacations for Medics

SINCE medical students are to be exempt from the draft (at least for the present) until their graduation, plans are on foot to speed up their educational progress by eliminating the long summer vacations and making the school year continuous, with four full quarters. This program will probably go into effect on or before July 1, 1942.

The Conquest of Goiter is Possible

CERTAIN essentials are absolutely necessary to an intelligent appraisal of diseases in general. Applied specifically to thyroid disease (which at this time is affecting uncounted millions of individuals in our country, including many thousands of otherwise normal young men who are thereby disqualified for military service, yet many of whom can be restored to normal thyroid balance through specific immunization), these essentials are: (1) To know the gross and microscopic structure of normal thyroids; (2) to be in assured possession of clear concepts regarding the functions of the thyroid; and (3) to know the special chemistry with which this important gland is immediately and exclusively concerned. When informed on these rudimentary items of fact, all of which are covered fully in published texts, and not until then, one is qualified to exercise sound sense in weighing norms (standard units of measurement) against all of the abnormalities that may be encountered in the course of thyroid disease.

The healing arts of merit are those founded upon a full appreciation of the ultimate objectives of scientific medicine: (1) To know everything possible about diseases in general; and (2) to cure or relieve those who are afflicted, through the intelligent use of specific agents, when these are available. A specific agent for goiter is now available in limited quantity, with no limit to the possibility of mass production.

The development of this specific for goiter was not possible until after its cause was revealed in tangible form. When the causative agents of goiter were demonstrated, several years ago,* all that was necessary to prove their basic rôle in the genesis of thyroid disease was proper experimentation with them. This has been done by several workers, and can be verified by any qualified doubter, with fresh cultures of goiter microbes. Physical evidences of early thyroid disease appear in rabbits within a few weeks after an intravenous injection of these organisms; and the same organisms can be recovered from rabbits, thereby discrediting the century-old surmise that thyroid disease might be due primarily to a lack of iodine.

Anatomy, physiology, and chemistry are never concerned with the objective revelation of disease causes. They merely fix the many academic units of measurement—standard norms that, in health, fluctuate between two extremes—beyond which one enters the field of pathology, which deals with the whole gamut of departures from normal anatomy, normal physiology, and normal biologic chemistry. All departures from normality must be regarded as effects of primary causes, regardless of whether these are known or still veiled in mystery.

There now remains no mystery about first causes of thyroid disease. They are within the grasp of every surgeon's fingers, every time he removes goitrous tissue from the neck, but to seek them one must work in the field of microbiology, which is concerned specifically with the first and, subsequently, routine exposition of primary causes of diseases in general. This science has revealed, thus far, about 150 specific types of microorganic life, each different form accounting for all of the pathologic changes peculiar to the disease that it starts and continues throughout every gross and minute detail. More of such organisms remain to be revealed, as they will be, in time.

Moreover, all diseases subscribe, as everything must, to the most basic of natural laws—that of Cause and Effect. Goiter is not an exception. Its causes are present, as they *must* be, in all goitrous tumors; and can be found in specimen flesh readily obtained on removal of diseased tissues, by specific microbiologic procedures, as has been done in each of the many thousands of specimens so studied, here and abroad.

Goiter is always of microbic origin, and so proved by laboratory procedures that subscribe to the recognized rules of research for disease causes. Antigoiter vaccine, a product made of microbes propagated from goitrous tissue exclusively, has long proved itself effective in the pre and postoperative treatment of the active phases of thyroid disease in many hundreds of cases treated during a period of fifteen years. A slowly increasing number of physicians, resident in sections of our country where goiter is prevalent, are using this product and reporting clinical results that verify the fact that "it works."

EMILIAN O. HOUDA, M.D.

Tacoma, Wash.

*See CLIN. MED. & SURG., Mar., 1932, p. 176, and Sept., 1932, p. 651.

Removal of Pigmented Moles

THE pigmented mole which becomes malignant (melanoma formation) is almost always fatal. F. C. Lee has written, "The only way to achieve better results is to urge *physicians to recommend prophylactic excision of all pigmented areas that are exposed to trauma or irritation,* because once a benign melanoma has become malignant, all measures to preserve life are usually too late" *(Surgical Clinics of North America,* page 1439, 1936).

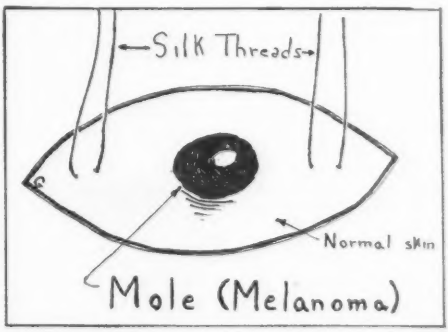


Fig. 1: Technic of removing a pigmented mole.

Incomplete excision is a common cause of malignant change. Lee's precautions are these: (1) Apply the pre-operative antiseptics *gently;* (2) inject the local anesthetic *at a distance from the tumor;* (3) insert two sutures (see Fig. 1) at a good distance from the mole, and use these threads, *not forceps,* in the manipulation of the tissue to be excised; (4) excise widely and deeply—down to the fascia—as aberrant tumor cells are found deeper in the subcutaneous tissue, and adjacent to the tumor laterally.

If a short-wave or diathermy machine is at hand, the cutting tip may be used to incise the skin and subcutaneous tissues, and to excise the tumor. For healing by first intention to follow, the current used must be *cutting*, not coagulating; secondary excision with the scalpel may be carried out at once, if a linear scar is desired.

R. L. GORRELL, M.D.

Clarion, Ia.

New Things in 1941*

CURE of *gray hair* in human beings, by daily doses of a member of the vitamin B complex, para-aminobenzoic acid, was announced in a report of more than 300 cases, believed to be the first scientific announcement of cure of gray hair in men and women.

Evidence that the cause of *cirrhosis of the liver* is poor diet, and probably a specific vitamin deficiency, appeared in many reports.

Tuberculosis patients were treated with Promin, a new chemical remedy, with results that justify continuation of the investigation.

It was demonstrated that bodily changes closely similar to those of profound *pituitary-gland deficiency* can be caused by chronic under-nutrition.

The urine of boys having *muscular dystrophy* was shown to contain large amounts of female sex hormones.

Encouraging results in treating *myasthenia gravis*, by surgical removal of the thymus gland, were reported.

Sulfathiazole ointment was reported a successful remedy for common skin diseases such as *acne*, *impetigo*, infected eczema and boils.

Discovery of an eighth member of the vitamin B group, folic acid, was announced.

A coumarin compound from spoiled sweet clover was announced as a possible effective and cheap substitute for *heparin*, anti-blood clotting agent.

Publication was begun, by the American Medical Association, of a bimonthly journal entitled "War Medicine," edited by the Committee on Information, Division of Medical Sciences, National Research Council.

Short tempers, inefficiency, inattention, uncertain memory, and confusion of thought were found to result from a diet only slightly low in vitamin B_1, but continued over a period of months.

Children short for their age were found to average low in intelligence, while those tall for their age average high.

Vitamin K in Hemoptysis

IN FOUR tuberculous patients who had active hemorrhages, the parenteral administration of vitamin K checked the bleeding within a day or two. Experiments have shown that patients with tuberculosis tend to show a deficiency of prothrombin, in direct proportion to the severity of the disease.—R. F. SHEELY, M.D., in *J.A.M.A.*, Nov. 8, 1941 (through *Science News Letter*, Nov. 15, 1941).

CLINICAL MEDICINE is much appreciated. It contains much valuable and easy-to-read information.—S. D. B., M.D., Wisc.

*From *Science News Letter*, Dec. 20, 1941.

Right Lateral Rectus Incision in Appendicitis

MCBURNEY'S incision is not the best one in complicated cases of appendicitis.

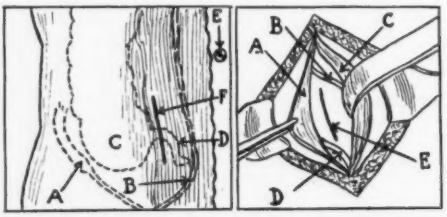


Fig. 1 (Left): (A) Anterior superior spine of the ilium; (B) Deep epigastric artery; (C) Cecum; (D) Appendix; (E) Umbilicus; (F) Location of the skin incision.

Fig. 2 (Right): (A) Anterior sheath of the rectus muscle; (B) 11th intercostal nerve; (C) Rectus muscle, retracted; (D) 12th intercostal nerve; (E) incision through posterior sheath of the rectus.

The right lateral rectus incision is located over the commonest position of the base of the appendix; does not cut or split the muscle; can easily be extended upward or downward, if need arises; gives the best exposure of the blood supply of the appendix and best access to the omentum; does not disturb the right paracolic gutter; opens up less tissue planes than any other similar incision; does not injure nerves or blood vessels; does not require forceful traction; permits easy drainage, with the patient in the right lateral position; is well suited to local anesthesia; minimizes rectus paresis and incisional hernias; and leaves a firmer abdominal wall, because the *intact* rectus muscle is merely retracted, not split.

The accompanying diagrams (Figs. 1 & 2) show the technical details of this operation.—C. GRANT BAIN, M.D., in *A. J. Surg.*, Nov., 1941.

Side-Effects of Stilbestrol (A Case Report)

I HAVE been using Stilbestrol, hypodermically, for some time, to relieve menopausal symptoms, with satisfying results; but in one patient there were side-effects which I have not seen mentioned in the literature.

Mrs. N. W., age 39 years, married and the mother of one child, was having typical menopausal symptoms and had been receiving estrogenic hormones hypodermically, with good effect; but when Stilbestrol appeared I decided to try it.

I gave this woman an ampule of the new drug, hypodermically, at 2 P.M. At 8 P.M. she began to belch and have epigastric pains, which were sharp and penetrated to the back and under both shoulder blades. At 10 P.M. the pain became much worse, and so continued until 3 A.M., when she vomited green bile, after which the pain was easier, but remained until the afternoon of the following day (48 hours in all). This was looked upon as a "bilious attack," and treated accordingly.

Several weeks later, I gave her another injection of Stilbestrol, which was followed by similar symptoms (including the 6-hour delay before their development), but somewhat less severe. After

another week she had a third injection, and the same syndrome again appeared, but worse than the first.

During these attacks the patient was in such severe discomfort that she could not tell whether the "hot flashes" had been relieved or not.

After these unpleasant experiences, I went back to the estrogenic hormones, with anterior pituitary solution, and this treatment is giving excellent results, without unpleasant reactions.

AUGUST HELMBOLD, M.D.
Cincinnati, Ohio.

Correction

IN THE Clinical Note on "Sulfonamides and Blood Viscosity," in CLIN. MED. for January, 1942, on page 25, in line 7, the words "blood viscosity" should read *blood serum viscosity*.—ED.

Propylene Glycol in Influenza Epidemics

EXPERIMENTS on mice seem to indicate that a fine mist of propylene glycol (a cousin of the "Prestone" used in auto radiators in the winter), in the air of schools, barracks, and other places where the air-borne transmission of influenza virus (which has now been seen and identified with the electron microscope, and an antivirus prepared) might take place, should materially diminish the probability of infection by that route. It would be well worth trying in the presence of an epidemic, as it is harmless to human beings in the concentration used.—*Science News Letter*, Dec. 27, 1941, and Jan. 3, 1942.

Newer Knowledge of Hemorrhagic Diseases*

THERE are two chief types of hemorrhage: (1) Blood escaping through a gross lesion in the vascular wall, due to external trauma or internal change; and (2) blood escaping between the endothelial cells of the vessel wall.

Hemorrhage is arrested by (1) retraction and contraction of the wound surface due to severance of elastic tissues, and contraction of capillaries, with vasodilatation of adjacent capillaries; (2) plugging with platelets; (3) the formation of a clot; (4) increase of tissue juices in the blood stream; (5) decreased blood pressure; and (6) where bleeding occurs into closed tissues, the hemorrhage may stop when the pressure reaches the same level as that in the blood stream. In *hemorrhagic diseases*, these natural protective processes *do not function*.

Defects in coagulation are not revealed by coagulation tests using whole blood. Those tests depending upon blood obtained by needle puncture are inaccurate, because the *tissue juices* help coagulation, but are not present in bleeding from mucous membranes (as after tonsillectomy or in hemorrhagic diseases).

When blood transfusions are used in the treatment of hemorrhagic diseases, the antihemorrhagic factor given to the recipient does not remain in the circulation for long. This is in contrast to the bleeding *surgical* patient, who is markedly benefited by a transfusion.

There is a moderate to marked decrease in blood coagulability in many cases of disease of the gallbladder, liver, bile ducts, and pancreas. Trauma added to this blood change results in hemorrhage. In most cases, the hemorrhage occurs in the operative wound or into the abdomen; gastrointestinal hemorrhage, bleeding through the T-tube, subcutaneous hemorrhage, and oral cavity and kidney hemorrhages also may occur.

If bleeding occurs through a T-tube draining the bile ducts, clotting may take place and drainage be stopped. If a satisfactory flow of bile through the tube stops, a large quantity of bile may be escaping around the T-tube into the abdominal cavity, and if not relieved, such a complication is inevitably fatal.

There is no direct relationship between the amount of jaundice and the time for blood coagulation to occur. The duration of the jaundice is important, as *the risk of operation increases with the length of time that bile duct obstruction is present.*

K. K. NYGAARD, M.D.
Oslo, Norway.

Sulfathiazole in Impetigo

ONE group of 20 impetigo patients was treated locally with a 5-percent ointment of sulfathiazole in cholesterinated petrolatum (Aquaphor); another similar group with the drug incorporated in cod-liver oil ointment; and a third group of 20 with sulfathiazole given by mouth (1.5 Gm. daily to children under 6 years of age and 2.5 Gm. to those older). The time required for a cure averaged 4.4 days in the first group; 4.8 days in the second; and 9.5 days in the third. The average amount of the drug used in the first two groups was 1.5 Gm., and in the third group, 14.25 Gm. There were no unpleasant local or general reactions.—DRS. L. H. WINER and E. A. STRAKOSCH, in *J.A.M.A.*, Jan. 17, 1942.

Foille in Burns

IN A series of 85 cases of severe burns, requiring hospitalization, about half were treated with tannic acid and half with a preparation containing benzocaine (for analgesia), oxyquinoline (for mild antisepsis), calcium soaps, and other drugs, as a water-in-oil emulsion with corn oil, known as Foille. Comparable cases were watched as closely as possible.

The tannic acid-treated patients were in hospital (on the average) 9 days longer, and took 7 days longer to heal, than those treated with Foille. The mortality with tannic acid was 24.3 percent, and with Foille, 15.9 percent. In all respects except the local dressings, the general treatment of these cases was the same.

Within a few minutes of the application of Foille, with a spray or camel's-hair brush, the pain is markedly relieved. A dressing of 2 or 3 layers of gauze, held in place by a few turns of clean bandage, is kept moistened with the emulsion, under a

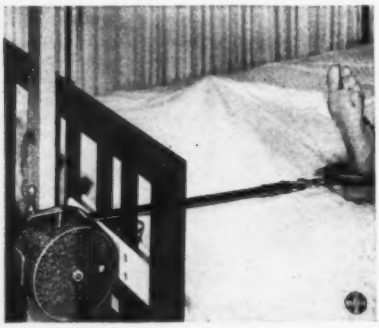
*"Hemorrhagic Diseases." (C. V. Mosby Company, 1941).

heated bed cradle, for from 48 to 72 hours. Then the dressings, debris, and crusts are soaked off in a tub of warm tap water, and thereafter the lesions are kept covered with Foille, without gauze dressings.

This method is considerably simpler than the tannic acid treatment, and the results, so far, are better.—JOSEPH E. HAMILTON, M.D., F.A.C.S., in *Industrial Med.*, Oct., 1941.

New Spring Traction Apparatus

THE standard apparatus used for applying traction (extension) in fracture cases is cumbersome, complicated, and not readily adaptable to varying circumstances.



Courtesy Clay-Adams Co., Inc.
Fig. 1: The Herzmark-Adams traction reel.

To overcome these disadvantages, one can now employ the new Herzmark-Adams spring traction reel (see Fig. 1), which is compact, reliable, simple, adjustable to any degree of traction required (from 1 to 20 pounds), and can be set up on any rigid frame, including portable litters, ambulances, trains, etc.

The advantages of such an arrangement in handling battle casualties is apparent.

Complications During Operations

WHEN a patient's *blood pressure* begins to fall during an operation, do not add speed, in an effort to complete the operation, as this results in added trauma and a greater drop in blood pressure.

The surgeon should never hesitate to abandon the operative procedure temporarily and devote his entire attention to measures which will restore normal *respiratory and circulatory function* in the anesthetized patient. This may require intravenous therapy, transfusion of blood, aspiration of mucus from the throat or larynx, support of the jaw, grasping the tongue with forceps, or mechanical methods of aiding respiration.

If *shock* seems imminent or the blood pressure begins to drop, in many instances it is better to remove retractors and cover the wound with hot, moist packs for two or three minutes. Oxygen should be given, by face mask, now and again for some hours after the completion of the operation. —A. BEHREND, M.D., in *Am. J. Surg.*, Aug., 1941.

New Method of Female Sterilization

A WOMAN may be sterilized, easily and simply, by fulguration of her fallopian tubes, through a peritoneoscope, using a high-frequency, high-voltage, pulsating current.

Under local anesthesia, a 1 cm. incision is made through the skin and anterior rectus sheath, just below and to the left of the umbilicus. A small trocar is inserted into the peritoneal cavity, pneumo-peritoneum induced, and the peritoneoscope introduced into the abdominal cavity. The Fallopian tube is then grasped with biopsy forceps near the cornu and the fulgurating current applied until a segment of tube 1 cm. in length is blanched. This may be repeated in another location 3 to 5 cm. away, and the opposite tube is then treated in a similar manner. The abdomen is closed with two fine silk sutures, and the patient remains in the hospital for from 12 to 18 hours.—DRS. FRANK H. POWER and ALLAN C. BARNES, in *A. J. Obst. & Gyn.*, June, 1941.

Early Routine Treatment of Pulmonary Embolism

ATTENDANTS should watch patients closely for dyspnea, cyanosis, pallor, or chest pain, which are the early signs and symptoms of pulmonary embolism. If these conditions appear, the use of oxygen, by face mask, is begun at once and 1/75 grain (0.75 mg.) of atropine sulfate is given immediately. The physician or intern then quickly gives ½ gr. (32 mg.) of papaverine intravenously and repeats the atropine injection if no marked flushing or dilatation of the pupils is present. The results from this treatment have been dramatic in some cases. Constant watch must be kept for a recurrence of symptoms.—GEZA DE TAKATS, M.D., in *Ill. Med. J.*, Jan., 1941.

[To have a patient, who is recovering satisfactorily from an illness or operation, die from pulmonary embolism is always a tragic event. The early onset of venous thrombosis in the legs can be detected by daily measuring the size of thighs. Thrombosis, the necessary forerunner of embolism, may be prevented by instructing the attendants to keep the patient from lying in one position all day and to see that he moves the legs, in flexion and extension, every day. Getting the patient out of bed on the fourth day after an operation, or earlier, also tends to prevent thrombosis.—ED.]

Treatment of Salpingitis

FOUR out of five cases of salpingitis can be cured by rest in bed, heat, and sulfanilamide. Surgery is required only to prevent frequent, recurring, disabling attacks of acute gonorrheal salpingitis, with pain and fever, or to cure such disturbing symptoms as dysmenorrhea or irregular or profuse menstrual bleeding.

Technic: Salpingectomy, even in the best surgical hands, has a mortality rate of 1 percent and a morbidity of 25 percent, and in many cases necessitates oophorectomy. *Simple excision of each uterine horn (cornu) prevents reinfection of the tube* from the chronically infected cervix. The

cervical infection is removed by amputating this structure or by cauterizing it. Eighty-five percent of our patients have been cured by this simple treatment, which does not endanger the ovaries nor cause a long convalescence postoperatively.—H. C. FALK, M.D., in *N. Y. S. J. M.*, Apr. 15, 1941.

[The basis for this operation is the fact that gonorrheal infection tends to become walled off in the tubes, and that recurrent salpingitis is due to a spread of infection from the cervix, over the unaffected endometirum, to the tubes. The hydrosalpinx usually contains only sterile fluid.—ED.]

Hanging Cast for Fractures of the Humerus

A SIMPLE, effective means of treating fractures of the humerus is this: (1) The fracture is reduced; (2) a cast is applied from the knuckles to the axilla, with the elbow at right angles; (3) a loop of wire is fixed into the cast at the wrist, to attach to a sling around the neck; (4) the cast is allowed to hang free on the sling, with the humerus vertical, and is not bound to the body in any way; and (5) the patient is allowed to walk around freely.

The patient is encouraged to rotate the arm at the shoulder. No worry need be felt about pain and crepitation during the first week, nor about movements of the fragments. A roentgenogram should be taken in one week.

Results: More than 300 fractures of the humerus were treated by this method at the Louisville City Hospital, with results that were much superior to those obtained by previous methods.—R. A. GRISWOLD, M.D., in *South. Med. J.*, July, 1941.

Abdominal Pain Due to Ovulation

ANYONE concerned with the diagnosis of lower abdominal pain in a woman of childbearing age should familiarize himself with the signs and symptoms of ovulation.

In ruptured graafian follicle cases, the symptoms occurred early or in the middle of the intermenstrual period.

In rupture of the corpus hemorrhagicum, some begin to have pain in the midportion of the menstrual cycle, but most have it in the latter part.

With corpus hemorrhagicum cysts, however, the symptoms occur about 21 days after the first day of the last period.

Such a patient should not be subjected to surgery until a careful gynecologic history has been obtained and the pelvic organs carefully examined vaginally, or rectally when this is impossible. Collateral evidence of ovulation should also be looked for.

Approximately 73 percent of disturbances of the ovarian follicles occurs between the ages of 15 and 25.

Where exploration of pelvic organs is indicated, the midline incision is preferred.

If these precautions are conscientiously observed, and repeated clinical and laboratory examinations are carried out when the emergency is not acute, many unnecessary operations may be avoided.

When operation seems necessary, extreme conservatism, with preservation of all normal ovarian tissue, should be the rule.—HERBERT E. BOWLES, M.D., in *Hawaii M. J.*, Nov., 1941.

Syntrogel in Hyperacidity

PATIENTS with digestive disorders generally overdose themselves with sodium bicarbonate; and many of the preparations designed to take its place are decidedly unappetizing.

Since the distress complained of may be due to a wide variety of pathoses, every such patient must be individually studied and treated; but meantime he can and should be given *symptomatic* relief.

This can be accomplished satisfactorily by Syntrogel, which contains aluminum hydroxide gel, bismuth subcarbonate, calcium carbonate, and the antispasmodic Syntropan, in a small, pleasantly-flavored tablet.

In 22 cases treated with this preparation, in addition to the specific treatment of the underlying pathosis, the relief of annoying symptoms was greater and more prompt than that obtained with other somewhat similar combinations of drugs, and there were no unpleasant by-effects.—DANIEL L. STORMONT, M.D., in *Med. Rec.*, Sept. 3, 1941.

Alpha-Tocopherol Acetate in Abortion

RECENT studies show that, when a woman has had one spontaneous abortion, there is a 30-percent chance that she will have a second; and after two, there is a 70-percent chance of a third.

We treated 32 aborting women with synthetic vitamin E (alpha-tocophorol acetate—Ephynal—Hoffman LaRoche), with these results: In 15 *threatened* abortions, 80 percent of the women delivered normal infants; in 10 who had had *previous* abortions, the percentage of success was 80; and of 7 *habitual* aborters, 5 (71.5%) carried their babies to term.

All patients were given 3 mg. of Ephynal daily, by mouth, from the time we first saw them until delivery (from 44 to 196 days). In addition, the patients with threatened abortion were put to bed until at least 4 days after all pain and bleeding had ceased. No patient showed any toxic symptoms or idiosyncrasy.—DRS. SAMUEL LUBIN and RICHARD WALTMAN, in *A. J. Obst. and Gyn.*, June, 1941.

DEMOCRACY AND SELF-DISCIPLINE

If democracy falls, it will not be because of any outside infringement by totalitarian countries, but rather because the individual citizen fails to practice the self-discipline necessary to maintain it.—CHARLES R. MANN, in *J. Adult Educ.*, Apr., 1941.

Diagnostic Pointers

Blood Pressure

● In determining blood pressure, elevate the patient's arm above his head, rapidly inflate the sphygmomanometer cuff to produce a pressure above the systolic pressure, and lower the arm to the level of the heart, before proceeding with the ordinary method of blood pressure determination. —M. BERRY, M.D., in *Proc. Staff Meet. Mayo Clin.*, Jan. 8, 1941.

Unexplained Fatigue

● Fatigue at the end of the day is physiologic, and for that reason may not receive serious attention; but fatigue in a young adult, which does not disappear after rest and sleep or the omission of night life, merits an investigation. It is a common and early sign of *tuberculosis*.—E. B. EMERSON, M.D., in *Dis. Chest*, July, 1941.

Hemothorax

● Hemorrhagic pleural effusions, as distinguished from gross amounts of blood in the thorax, are not always caused by *malignant neoplasms. Tuberculosis, pneumonia* (both lobar and bronchopneumonia), lung abscess, sepsis, syphilis, pulmonary emboli, uterine fibroid tumors, leukemia, and cardiac failure may also result in blood-tinged pleural fluid.—K. BERLINER, M.D., in *Ann. Int. Med.*, Oct., 1941.

Locating the Appendix Tip

● When endeavoring to remove an acutely inflamed appendix, instead of grasping the infected organ, pass a tape through its mesentery and around the base of the cecum. Traction on this tape facilitates identification and freeing of the appendix tip.—G. H. BUNCH, M.D., in *South. Med. & Surg.*, Sept., 1941.

Lung Calcification

● Small calcium deposits in the lungs (seen with the x-rays) are not always due to old tuberculosis, especially if found along the Appalacian Plateau. Of 194 tuberculin-negative persons, 56 showed lime deposits in the lungs. This seems to be the result of a common disease that is not yet recognized.—*Science News Letter*, Nov. 29, 1941.

● It is safer for the patient and for one's own reputation to doubt one's own diagnostic ability, rather than to be too sure.—J. GARLAND, M.D.

Snap Diagnoses

● Someone once remarked that the physician who gives morphine in a hurry puts two people to sleep. A similar statement can often be made about the snap diagnosis of neurosis. It is often overlooked that an objective pathologic condition may produce the symptoms of a neurosis.

One of the most famous cases in this hospital was that of a barber 36 years of age. The story goes that, while massaging the scalp of a nurse, his hand wandered just when the superintendent of nurses appeared on the scene. Immediately following this incident, the patient failed to recognize his acquaintances, lost all interest in his environment, neglected his family, refused to work, and began to brood. He was treated for a neurosis for some time, and was even given hypnosis. After 21 months of hospitalization, during which time his condition was diagnosed as being hysteria, he expired from *multiple cysts of the brain*.—H. S. APPLEBAUM, M.D., in *Ohio S.M.J.*, Feb., 1941.

When To Remove Sutures

● Sutures should be removed as soon as union has taken place. The longer they remain in the tissues after having served their purpose, the more the likelihood of a conspicuous scar.—S. FOMON, M.D., in "The Surgery of Injury." (Williams and Wilkins, Publishers).

Anemia in Rheumatic Fever

● Any anemia otherwise unaccounted for should remind one of rheumatic fever toxemia. Anemia, often severe, usually develops during the active phase of the disease, and improves as the infection subsides. The resultant pallor is mild, early, and is not necessarily accompanied by diminished hemoglobin.—J. L. FOSTER, M.D., in *Penn. Med. J.*, Jan., 1941.

Uremia in Children

● Uremia or cerebral edema, occurring with nephritis, causes headache, dizziness, somnolence, hypertension, and eventually coma and convulsions. *Treatment:* Prompt injection, intravenously, of 25-percent dextrose solution or, intramuscularly, of from 2 to 4 cc. of 50-percent magnesium sulphate solution, at 4-hour intervals, until the blood pressure reaches a safe level.—J. BRENNEMAN, M.D., in *J.A.M.A.*, Mar. 16, 1940.

Avoid Errors

● To err may be human, but when it is at the patient's expense it becomes inhuman, and unpardonable if it can be avoided.—H. S. APPLEBAUM, M.D., in *Ohio S. M. J.*, Feb., 1941.

Thumbnail Therapeutics

Quinine Prophylactic Against Influenza

● In 6,500 factory workers, given 5 grains of quinine sulfate every morning for two weeks, the number of cases of influenza began to decrease in 48 hours and the total number of cases was only one-fourth of that in an equal number of controls. —A. G. SCHNURMAN, M.D., in *Va. Med. Month.*, June, 1941.

Injection Treatment of Hemangioma

● In the larger, compressible hemangiomas, sodium morrhuate is injected directly into the tumor, without previous anesthesia. The point of the small needle (25 or 26 gage) is placed about midway between the surface and base, care being taken not to approach the skin too closely. Small capillary hemangiomas are treated by application of carbon dioxide snow for from 10 to 20 seconds, repeated every 10 to 20 days. Both methods of treatment give soft, pliable scars.—R. M. FLEMING, M.D., in *E. N. T. M.*, Apr., 1941.

Wetting Agents

● Several new synthetic chemicals, classified as "wetting agents," are valuable additions to our armamentarium for the preparation of lotions, creams, and ointment bases. Among these are "Aerosol OT dry"; "Dupontol ME"; and "Ocenol KD" (refined technical oleyl alcohol).—W. W. DUEMLING, M.D., in *Arch. Dermatol. & Syphilol.*, Feb., 1941.

Dextrose Infusions in Angina Pectoris

● The intravenous injection of 50-percent dextrose solution relieves the pain of angina pectoris promptly. The pain of peptic ulcer is also relieved. —J. BARBOSA, M.D., in *Brazil-Medico*, July, 1940.

Quinine in Muscle Spasm

● Painful spasms of the muscles in the extremities, occurring in older persons while at rest, are frequently relieved by quinine sulphate. The "night cramps" were relieved, in some cases, within a few hours. The dose varied from 3 to 9 grains (0.2 to 0.6 Gm.) daily.—H. K. MOSS, M.D., in *J.A.M.A.*, Oct. 19, 1940.

Belladonna for Obesity

● The use of belladonna, alone or with a mild sedative such as bromide or phenobarbital, definitely decreases the appetite of obese and diabetic patients. Ten drops of the tincture are given before each meal.—J. A. GREENE, M.D., in *J. Lab. Clin. Med.*, Dec., 1940.

Neoarsphenamine By Mouth

● The oral administration of from 3 to 5 times the intravenous dose of arsphenamine and neoarsphenamine was effective in curing experimental syphilis.—J. A. KOLMER, M.D., in *Am. J. Syph.*, Jan., 1942.

[This experimental work may pave the way to relatively simple antisyphilitic treatment.—ED.]

Digitalis Therapy

● Because digitalis preparations are now from 30 to 50 percent stronger than those in use a few years ago, the doses should be reduced by one-fourth. Digitalis should be given only to patients with clear evidence of heart failure, or in whom such failure threatens or is in doubt, and to cases of auricular fibrillation or flutter that do not clear up quickly, either spontaneously or by the use of quinidine. If mercurial diuretics are being given simultaneously, look out for toxic digitalis effects as the edema disappears.—P. D. WHITE, M.D., in *New Orleans Med. & Surg. J.*, May, 1941.

Thiamin In Pernicious Anemia

● Pernicious anemia patients whose neurologic signs do not promptly disappear under intensive liver therapy, should receive 3,000 units (10 mg.) of vitamin B_1 (thiamin), three times weekly, for a period of from one to two months.—J. C. ZILLHARDT, M.D., in *Ann. Int. Med.*, July, 1941.

Semilunar Bone Fracture

● Small fractures of the semilunar bone in the wrist may not be seen on the roentgenogram taken immediately after the injury. As early use of the wrist may lead to softening (malacia) of the bone, the wrist should be immobilized until pain has disappeared or repeated roentgenograms, after three or four weeks, show no fracture or other osseous lesion.—*Miss. Val. Med. J.*, Jan., 1941.

Vitamin D in Acne, Pemphigus, and Psoriasis

● Viosterol, in doses of 24 drops daily, gives satisfactory results in 75 percent of patients with acne vulgaris. The dose may vary from 20,000 to 100,000 U.S.P units daily. Vitamin D has been of value in treating scleroderma (localized), granuloma annulare, psoriasis, and pemphigus.—T. S. SAUNDERS, M.D., in *Northwest Med.*, June, 1940.

THE DOCTOR'S STUDY

New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

The mind grows by what it feeds on.—J. G. HOLLAND.

Medical Philosophy

THE MARCH OF MEDICINE. New York Academy of Medicine Lectures to the Laity, 1941. *Foreword by* MALCOLM GOODRIDGE, M.D., *President, The New York Academy of Medicine. New York: Columbia University Press. 1941. Price, $2.00.*

ALTHOUGH this book is a compilation of lectures delivered to laymen, under the auspices of the New York Academy of Medicine, and is written in non-technical language, it seems more appropriate for study by medical men and philosophers than for "the man in the street."

The volume is well made, and the text, from the introduction, by Haven Emerson, to the closing chapter, by Francis Carter Wood, is so well written that it makes fascinating reading. Three of the chapters are definitely philosophic in tone (especially "Philosophy as Therapy," by Irwin Edman, Ph. D.), one is historical, and only two of the six deal with *physical* problems of medicine.

No physician who reads this little book attentively, and ponders upon the ideas presented, can fail to be a better doctor for having done so.

Blood Banks and Transfusion

Kilduffe and DeBakey

THE BLOOD BANK AND THE TECHNIQUE AND THERAPEUTICS OF TRANSFUSIONS. *By* ROBERT A. KILDUFFE, A.B., A.M., M.D., F.A.S.C.P., *Director, Laboratories, Atlantic City Hospital; City Bacteriologist, Atlantic City; etc., and* MICHAEL DEBAKEY, B.S., M.D., M.S., F.A.C.S., *Assistant Professor of Surgery, School of Medicine, Tulane University of Louisiana; etc. St. Louis: The C. V. Mosby Company. 1942. Price, $7.50.*

BLOOD transfusions are now a part of the routine treatment of a number of conditions, and blood banks have added to their popularity, so this handsome and authoritative volume is especially timely in these war days.

Important among the 16 chapters are those on blood typing, military aspects of transfusion, blood and plasma banks, preparation of dried plasma, technics of transfusion, etc.

The entire complex subject is covered adequately, with 214 illustrations (many of which are highly instructive diagrams) and a color plate of blood typing reactions. Each chapter is followed by an *extensive* bibliography, and there is an adequate index.

No physician, today, can afford to be ignorant of the indications for blood transfusions or of the method of giving them, and this book contains all that any physician —from the crossroad practitioner to the expert—needs to know.

Life of Dr. Beaumont

Meyer

LIFE AND LETTERS OF DR. WILLIAM BEAUMONT. *By* JESSE S. MEYER, A.B., M.D., *Late Associate in Medicine, Washington University, St. Louis. St. Louis: The C. V. Mosby Company. 1939. Price $5.00.*

IT IS necessary for every well-rounded practitioner of medicine to have at least a fair knowledge of the history of his profession, in which the story of William Beaumont is one of the most dramatic episodes.

This book, which is a reprint of the first edition of 1912, is a welcome addition to the library of any physician. It not only carries the original introduction of Sir William Osler, but also an appreciation by Professor Andrew Conway Ivy, of Northwestern University Medical School, written especially for this edition. It is well printed, profusely illustrated, and is most complete, both as regards Beaumont himself and the details of his work. An appendix tells of the last days of Alexis St. Martin, and another, printed for the first time other than in pamphlet form, contains four letters from St. Martin to the authorities of Rush Medical School.

This is the most complete presentation we have seen, and is carefully built around Beaumont's journals and letters. At no time does the author permit himself flights of undue enthusiasm, and yet it is interestingly written in a clear, flowing style that makes excellent spare-time reading for any medical man.

—L. D. Van A.

Other Books Received

With Brief Descriptions

CHINESE LESSONS TO WESTERN MEDICINE. *By* I. SNAPPER, *Professor and Head of the Dept. of Medicine, Peiping Union Medical College, Peiping, China. With a Foreword by* GEORGE R. MINOT, *Professor of Medicine, Harvard University. New York: Interscience Publishers, Inc. 1941. Price, $5.50.*

A well made book with interesting and valuable descriptions of several diseases, rare in the United States, and of the differences in common diseases under Chinese conditions. Will be helpful to all internists, and good reading for any physician.

THE SYNTONIC PRINCIPLE: Its Relation to Health and Ocular Problems. *By* HARRY RILEY SPITLER, D.O.S., M.S., Ph.D. *Eaton, O.: College of Syntonic Optometry. 1941. Price, $10.00.*

A complex presentation, in a rather small and poorly-made volume, of a highly controversial and so-far-unverified hypothesis as to the effect of light rays entering the eyes on the general health.